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FEBRUARY 2001 NO. 54

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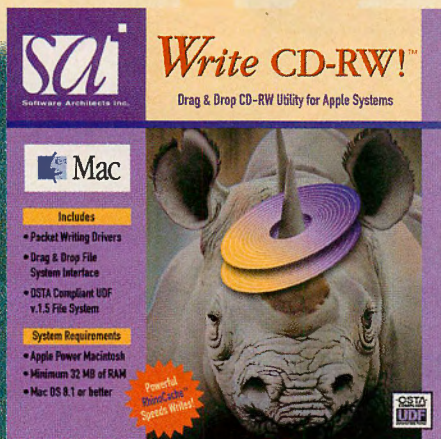
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Software Architects Inc.

highlights

24 Build Your Own Apps

If you're tired of paying for software you don't even like, then get off the couch and do something about it. We teach you how to create your own applications so they look and function the way you want them to.

by Ian Sammis



Darned coffee stains...

36 The Dirty Dozen

We love the Mac OS, but parts of it make us want to take a steak knife to our computer screen. Finally fed up, we've marked 12 parts of the Mac OS for death—and we'll tell you how to dispose of them without getting your hands bloody.

by David Reynolds



Which one of you is the Applesauce baron?

42 Xtreme Mac

Tony Hawk. You probably know him as that Xtreme skateboarding dude or the subject of the game that's hooked all your PC and PlayStation friends. But what you probably don't know is that Tony Hawk is a super Mac freak and an expert digital videographer. Learn Hawk's secrets to making *hot* action videos (of the skateboarding variety, of course!)

by Narasu Rebbapragada and Cathy Lu



Standard beating or extra large?

how to

68 Paint a Photo in Photoshop

It may sound hard to believe, but the pros still have secrets—even after our roundup last August! We rounded up a pro we missed last time, and got the inside scoop on turning photographs into painting-like art. **by Ian Sammis, art and technique by Judy Mandolf**



Day 35. I have lost all hope of ever leaving my prison.

72 Turn an Internal IDE Hard Drive into an External FireWire Drive

If you've got a spare IDE drive sitting around, it's about \$140 away from transformation into a great external FireWire drive. Here's how to do the conversion. **by Ian Sammis**



Jonathan Ives's job is safe from us...

74 Get MP3s from Usenet Groups

While the world waits with baited breath to find out if Napster will become a pawn of the recording industry or plain old-fashioned roadkill, we reach back to the early nineties for another way—plain old-fashioned Usenet groups. **by Joseph O. Holmes**



Ouch! I've got an ingrown quarter note!

78 Light Up Your FireWire

We finally broke the sanity barrier—now we're just soldering stuff for the sake of the fumes. Here's how we made a neat little flashlight, powered right off the FireWire bus. **by Ian Sammis**



So that's how Rudolf did it!

Another sizzling cover
by Creative Director
Wayne Allen!



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Volume 6, Issue 2

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every month

8 Editor's Note

What's a bygone, and why are we all so content to just let them be themselves?

10 Letters

We swear we don't make these up.

14 Get Info

We've got our yearly valentines to dole out, and sneak peeks at Premiere 6, USB 2, and the future of compact storage. Toss in some freaky peripherals, a MacLib, and the usual cast of columns, and it's like a Mac banana split. You'll be the top banana, of course.

22 Scrapbook

The AOLization of Netscape seems to be complete with the release of Netscape 6. With its cookie management, fancy new interface, and swappable themes (some of questionable taste), it's really a new take on an old browser.

46 Reviews

Starring in this month's *Reviews* are Media 100's Cleaner 5, Apple's iMovie 2, and Sony's DCR-TRV520 DV cam. In the game department, we check out Macsoft's Links LS 2000 and Beachhead 2000. We've also got the Handspring Visor Prism (ooh, color), the Olympus Camedia C-2100 Ultra Zoom digital camera, Eudora 5.0, Aladdin Systems' StuffIt Deluxe 6.0, the Formac ProTV, Kidz Stuff, and much more.

66 Powerplay

All right, Tom Clancy wannabes, listen up. It's the all-antiterrorist edition, in which we preview *Rogue Spear* and the upcoming *Rainbow Six* sequel, then dig into *Tactical Ops*—an Unreal Tournament mod that turns the game into a hostage-rescuing shootout.

80 Ask Us

Have you been dying to find out how to make your email messages more annoying? Hit 'em with both barrels blazing—send HTML emails *and* VCF enclosures.

112 Shut Down

Get a hold of yourself—or at least your iBook—before you read this. Otherwise, you might spew your beverage of choice when you guffaw.



I would have guessed boxers...are those Underoos?



Wow, that'd be so stylish—if it were 1976.



Drew Carey—the early years.

Spare a dime for homeless Rob?
Sick of this issue yet, Ian? Glenlivet the agony away.



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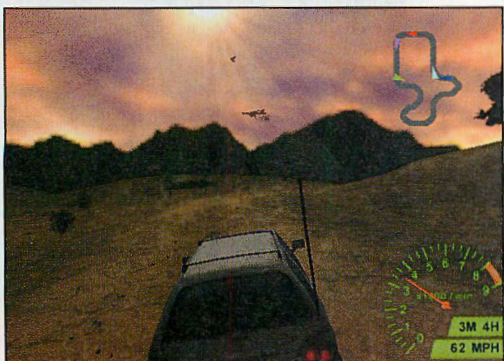
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Yeah, it's all pretty and peaceful now—but terror awaits!

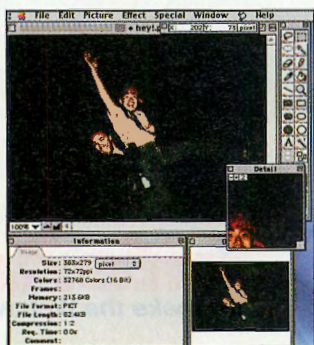


With a view like this, who needs an office window?



It's a five-car pileup! Woo-hoo!

The best shareware graphics application just got better—again.



The Game Gods Smiled Upon Us!

Heavy Metal FAKK 2 Demo

Getting a little tired of Lara? From the pages of *Heavy Metal* magazine comes a demo of *Heavy Metal FAKK 2*. In this game, you take on the role of Julie Strain, the new star of third-person shoot-'em-ups. Battle a horde of nasties with a powerful arsenal of weapons and shields as you progress through a twisted but brilliant story that could only have been derived from the visions of the cult seventies comic magazine.

4x4 EVO Demo

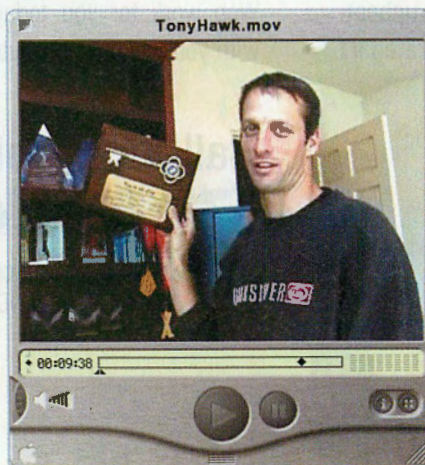
Maybe you're spending a little too much time on your Mac—a whole world of adventure awaits you outside! Not quite ready to peel yourself out of that office chair yet? It's all good, because we bring the joy of outdoor thrill-riding right to your computer. *4x4 EVO* is an immensely popular, dynamic simulation-racing game designed to pump your adrenaline whether you're in single-player mode or competing head-to-head against network players. Here's yet another reason to put off what others call the important things in life.

Cro-Mag Rally Demo

It's like LucasArts' *Pod Racer*, only more down-to-earth. Learn about the evolution of man (and woman) as you take on the role of a speed-crazy caveperson racing through the Stone, Bronze, and Iron Ages. Discover historical weapons such as Bone Bombs and Heat-Seeking Homing Pigeons. Hopefully, you've read all this with a grain of salt, because learning is the last thing you'll be doing in this addictive and strangely charming racing game.

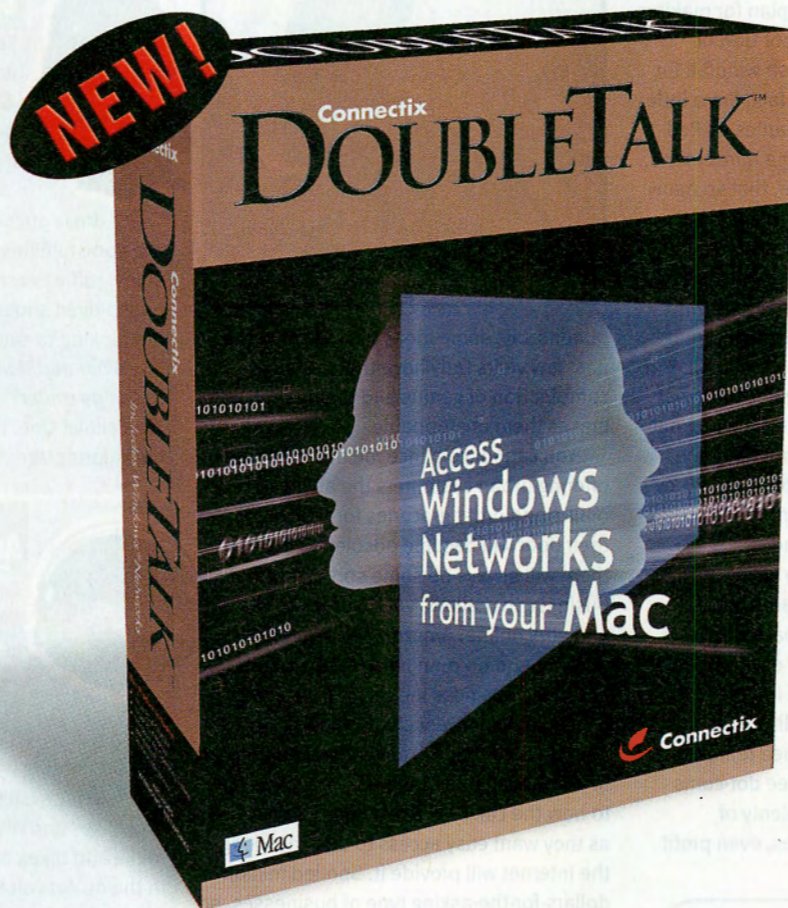
Graphic Converter 4.0

Life isn't *all* games—once in a while we have to hunker down and do some work. When it comes to graphics, this new version of *Graphic Converter* makes the shareware image-editing giant even better! This powerhouse program covers just about every graphic format out there. Don't go throwing away those Zo4, Z32, and CUR files just yet!



In this month's staff video, Cathy and Narasu interview the star of skateboarding, Tony Hawk, who talks about his early experiences with Macs and his killer DV setup. He also gives us some tips for shooting adrenaline-pumping skate videos.

The Simple Way to Access PC Networks



DoubleTalk from Connectix revolutionizes Mac-PC networking by enabling Power Mac users to connect to PC networks and printers from within the familiar Mac interface. DoubleTalk sets up quickly and easily in the Mac environment. It automatically configures its network settings, then lets you access network resources and services through the Chooser or Network Browser. DoubleTalk works automatically and transparently in the background, requiring little or no user intervention.

Access file servers, transfer files from shared Windows workstations, print to networked Windows Postscript printers, and create a peer-to-peer network with Macs and PCs with little or no help from your IT department. Purchase Connectix DoubleTalk online from the Connectix eStore or from your favorite software retailer. For more information, go to www.connectix.com.

Come Visit us at Booth #1407 during Macworld SF.

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editor's note

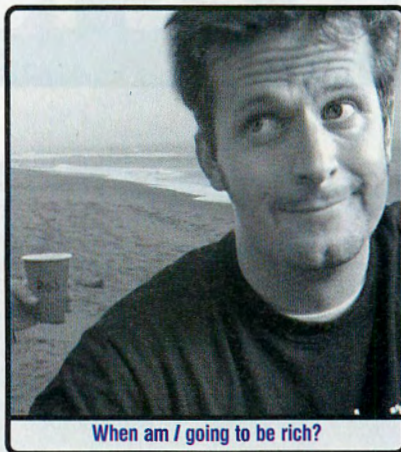
Dot-Gone.

I'm as happy as anyone to watch bloated Internet-based companies gasp their last breaths of venture capital, roll over, and die. Many of these businesses set up shop with truckloads of cash and hundreds of employees, and their only plan for making money was to hope some act of God or technology would create a cash windfall for them. They deserve to fail. In fact, I'm a little disappointed that such companies as Red Hat and Napster aren't having a harder time.

I am a bit irritated, however, that so many people seem ready to declare the Internet boom over. Investors, industry leaders, and the media rushed into the dot-com business like crack fiends, saturating every idea with cash and pillaging every trend until nothing remained but a stripped carcass—the husk of a potentially cool idea. Overzealous Internet gold rushers ruined the browser; the original .com, .net, and .org naming structure; and the notion of high-quality content—and they ruined my hometown of San Francisco by transforming it into a wasteland, oversaturated with technology workers. Now these same industry insiders are shocked and dismayed that their approach didn't work. They're crawling all over each other not to be the last one to condemn Internet business, maintaining the ability to say “I told you so” while they sack their remaining offspring. Sure, I'm happy to see dot-coms put in check, but there's still plenty of innovation, revolution, and, yes, even profit left in the Internet.

Internet gold rushers ruined the browser, the original .com naming structure, the notion of high-quality content, and my hometown of San Francisco.

One old saying got tossed around so much during the Internet gold rush that I think of it as the startup mantra: *There is no force so powerful as an idea whose time has come.* Of course, the same people who hammered that phrase into my head are now considering whether the time for their ideas has passed. They're not going to get millions from the IPO or the immediate sale of their powerful force, so what's the point? That was a terrible approach to take to Internet business in 1999, and I think it's still a terrible approach. No matter what the



When am I going to be rich?

pundits say, some ideas uncovered in the past few years truly have that profound combination of genius and timing that makes them unstoppable.

You cannot convince me that a service offering urban customers the ability to hop online and order groceries for delivery to their door will become obsolete. I believe there will always be some sort of Internet business that allows you to order books and gifts online. Amazon and Webvan may not end up running such operations, but these business models *will* succeed.

Dynamic delivery of information is another idea that will never die. People want to know everything from why the sky is blue to how the Lakers did last night, and as long as they want easy access to this knowledge, the Internet will provide it. Spoiled million-dollars-for-the-asking type of businesses, so popular in the last few years, may not deliver that information, but in my opinion that's a good thing. Going forward, perhaps we can look for online ideas that, instead of killing traditional businesses, attempt to expand them—ideas capable of progressing at a rate that keeps them from imploding.

I implore the venture capitalists, the seasoned Internet developers, and the dreamers of tomorrow's online world not to give up on the Web as hastily as they took it up in the first place. There are still plenty of Next Great Web Ideas waiting for discovery. If we look for ideas based on functionality, practicality, and societal benefit, we can create a steady, evolutionary online existence in place of the binge-and-purge system we're currently facing. I believe in ideas, not in making or losing money for money's sake.

Staff Rants

Cathy Lu

Tired-of-Reading-Programming-Articles Editor

Q. If you started an online business, what service would it provide?

A. I'd start a bridesmaid-dress auction site. Bridesmaids who are done fulfilling their duties could sell their shiny, ruffly peach dresses and matching peach-dyed shoes to future bridesmaids who are looking to save a couple of bucks.

Q. What traditional company would you like to see go under?

A. Cellular One. The world would be a less obnoxious place without cell phones.

Andrew Tokuda

Doesn't-Understand-Why-Shareware-Authors-Don't-Want-to-Be-on-The-Disc Editor

Q. If you started an online business, what service would it provide?

A. Something where I can sit and watch TV while my system automatically processes and distributes products I don't make and takes care of customer complaints in the dulcet voice of Victoria, the Mac's speech babe.

Q. What traditional company would you like to see go under?

A. I'd like to see the old company I worked for go under. That job really sucked.

Niko Coucouvanis

Just-Glad-to-Be-Here Editor

Q. If you started an online business, what service would it provide?

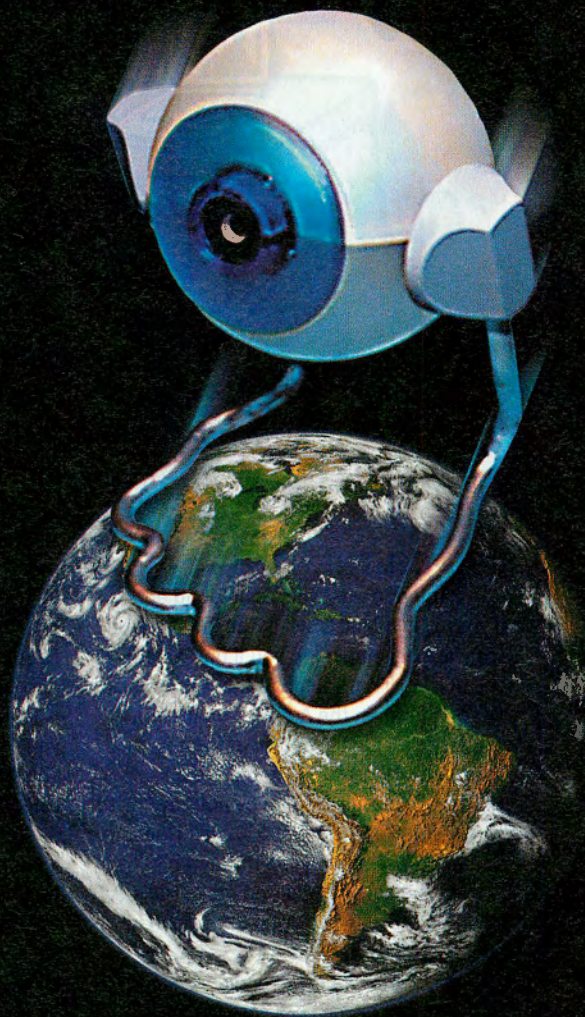
A. Put an end to spam once and for all. Don't ask me how, but it would. And it'd make me bags of cash, too.

Q. What traditional company would you like to see go under?

A. That'd be Regis Philbin. He's incorporated, isn't he?

"HOUSTON..."

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Orange Micro is first to market with the iBOT, a FireWire-based desktop video camera. iBOT harnesses the speed and power of FireWire unmatched by the slower USB-based web cams. In fact, the inexpensive iBOT uses the same IEEE 1394 technology built into pricey DV camcorders costing over 7 times as much. Orange Micro's iBOT is the desktop video camera for the rest of us, providing

crisp, clear video at a price you can afford. (640x480 @ 30 fps)

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letters

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ASK SHERLOCK

In the toolbar in Sherlock 2, the button to search for people is a picture of a woman. She is located between the Internet button [represented by a globe] and the shopping button [represented by a shopping cart]. Who is she?—*Al Puttsky*

NO SEXY PLATFORMS IN THE CITY

While watching my wife's favorite show on HBO last night, *Sex in the City*, I noticed that the lead character's PowerBook (Wall Street edition) had the white Apple logo on the cover concealed with a circular, black piece of tape. It wasn't always this way. The inside of the laptop and screen also used to show a Mac environment, but now the camera tends to zoom in on the part of the screen she's typing so no Apple logos or icons are visible. Why spend all the money on a PowerBook and do that?—*Ken Canestraro*

Recently Sighted

Guess what OS runs in my vegetable garden!—*MacTar@aol.com*



The Great Pumpkin revealed.

Who's that girl?
We have no idea.

EGG-CELLENT

Just wanted to pass this on: I found an Easter egg in Mac OS X! In the Public Beta software developer kit, you'll find an app called Hack TV. If you go to the About Hack TV command (in the Application menu), you'll see an Easter egg (or at least a humorous message): "Brought to a shambling mockery of life by nobody," with an exit button reading "So What." Guess Captain Steve let one slip through his fingers...unless Apple didn't make Hack TV, in which case I look like an idiot. D'oh in advance.—*Eric Schmitt*

That message appears in earlier versions of Hack TV, not just the OS X version. Hack TV does carry an Apple Computer copyright, so you're not a complete idiot, anyway.—Ed.

WE'LL FACT-CHECK MORE CAREFULLY NEXT TIME

There is an error in your review of Microsoft Office 2001 Macintosh Edition (*Reviews*, Dec/00, p58). The caption likens the hinged plastic box to "a very geeky makeup case." In fact, it more closely (and more appropriately) resembles a toilet lid.—*Robert Bass*

YES, AND IT'S CONTAGIOUS

I was watching the staff video on the November Disc, and man, was I surprised. Does Ian laugh that much on a daily basis?—*Simon Shim*

WE COMPLETE ALL OUR TASKS EXACTLY WHEN THEY'RE DUE—DON'T YOU?

I purchased MS Office 2001 on the strength of your review; however, I think this product is fatally flawed. In the Calendar window, you can only display the tasks due today. This is also true if you print out the daily calendar as I do every day.

You also can't show overdue or incomplete tasks. Microsoft Outlook can do this, and so can the Palm desktop application. Yes, you can display all these tasks in the Task window, but it is inconvenient to switch back and forth between the two views. I think your reviewer missed a significant problem.—*Jeff Young*

We were able to view and print tasks due today and tomorrow (complete and incomplete), but we couldn't view or print any other day's tasks.—Ed.

OUR MANUAL IS VERY UNOFFICIAL

I recently purchased Microsoft Office 2001, and I'm very frustrated to discover that it doesn't have a manual. Then I read "Microsoft Office 2001: The Abridged Manuals" (Dec/00, p44) and was delighted to realize that I'm not alone and that you have published a manual.—*Verna Harvey*

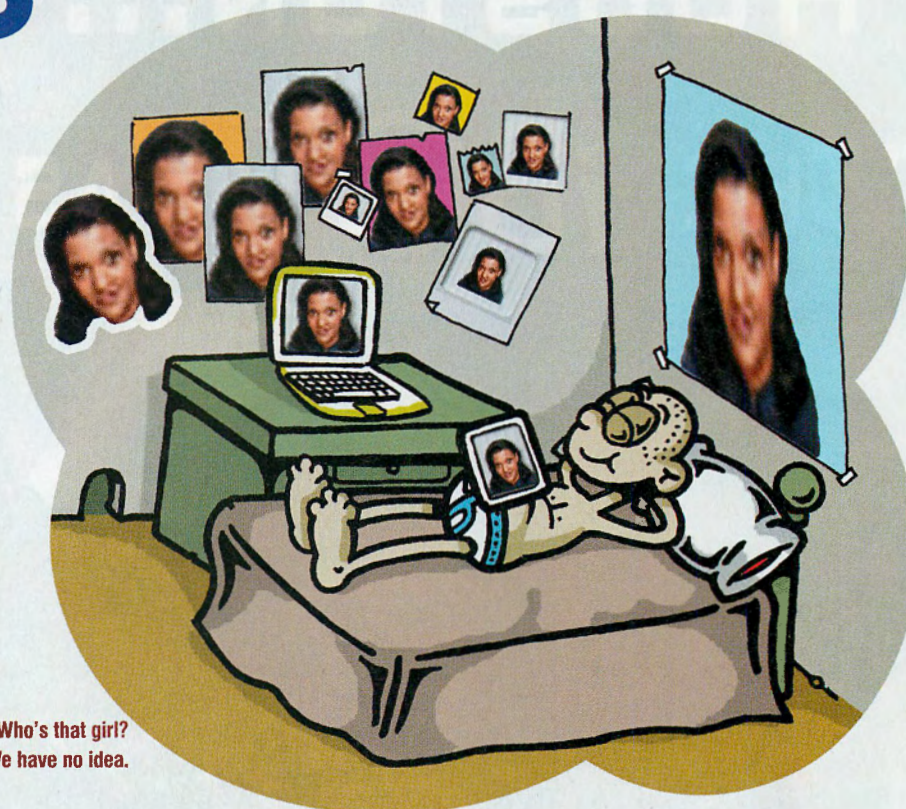


ILLUSTRATION BY DAVID "TITEY-WHITEYS" ROSS

WHO DOESN'T LIKE PEARLS?

"Microsoft Office 2001: The Abridged Manuals" in your December 2000 issue was one of the most useful articles I have read in any of the several Mac magazines I receive. The tips were relevant to the everyday user and got right to the point. Who needs a manual when your article reveals the hidden pearls? Thank you very much from a now lifelong subscriber.—Don Levick

EUSI EGASSEM LANIMILBUS LAICEPS EHT

I just opened up my December 2000 issue of *MacAddict* and got through page 16. Then things got weird (even more so than is usual with you folks). It turned out that pages 17 through 32 were printed upside-down and placed backward in my copy. Page 16 was followed by page 32, followed by page 31, page 30, and so on. Do I have a collector's item? Should I check out The Disc and see if the staff video plays backward?—Al Courduff
Thanks for the heads-up. There appears to have been a printing glitch on a batch of issues. Our production department is looking into it.—Ed.

REMEMBER WHAT CURIOSITY DID TO THE CAT?

You should tell people not to mess with the ROM file on new iMacs, no matter how tempting it may seem. It's not a good idea, trust me.—zoodog

VIEWS ON REVIEWS

C'mon, guys, get real. In the December issue, you reviewed two pieces of software: Office 2001 Macintosh Edition and Quicken 2001 Deluxe (*Reviews*, Dec/00, p62).

I know Microsoft is a good advertiser, but to give Microsoft Office a *Freakin' Awesome* rating is really silly. There was no mention of the cost. Just because it isn't coming out of your personal pocket doesn't mean \$300 for an upgrade is OK.

Then there is Quicken 2001 Deluxe. Admittedly, it is competent home finance software. However, even a *Spiffy* rating is a little much for the latest version, which adds nothing but advertising for an upgrade price of \$40.—Bill Eppick
We should have pointed out the price as "Bad News" in the Office review, but it wouldn't have changed our rating. At any price, there's no comparable package as full-featured as Office 2001. We evaluated Quicken 2001 Deluxe from both the new user and upgrade points of view. We pointed out that it's a lackluster upgrade, but for new users, it's worthy of a Spiffy.—Ed.



**This is no cheap Photoshop trick.
He's the real deal.**

DIDN' I, DIDN' I, DIDN' I SEE ME IN THE MAGAZINE?

Whilst on an airplane reading my favorite mag (*MacAddict*), I noticed a review for a product I happen to use—Unity DS-1 2.0.1 by BitHeadz (*Reviews*, Nov/00, p68). At the bottom of the page, I read, "Remember that guy from Cheap Trick whose guitar had five necks?". Well, not only do I remember, I am that guy! Keep up the good work.
—Apple addict Rick Nielsen

SEE THE MOVIE, STOP THE RUMORS

OK, you have my attention. What is the meaning of the bottom line on your December issue's front cover ("This issue goes to 11")? Are you leading us to believe OS 11 is on the way already, even before OS X has matriculated?—G. Allen

We were referring to a frequently quoted line from the 1984 film This Is Spinal Tap. We have no knowledge of plans for Mac OS 11.—Ed.

JUST STOP SEEING THE MOVIE

I just received the December 2000 issue of *MacAddict*. In this issue alone, I noticed several Spinal Tap references during my initial flip-through. Can I expect the next issue's cover to be entirely black?—Jeff Hunsel



YOU SAY TOMAYTO, WE SAY TOMAHTO

In the "Let's Go Cupertino!" article (Dec/00, p55), you mistakenly captioned a photo of the City Center Towers at the intersection of Stevens Creek and DeAnza Boulevard as the Cupertino Civic Center.—Bob Wambaugh
We stand corrected.—Ed.

UNJAMMING THE I-JAM

I liked your review of the I-Jam MP3 and CD player (*Reviews*, Dec/00, p65) and agreed with most of it. However, here's a little advice for those who find themselves stuck with this dog of a product. If you want the player to continue playing the second song in a directory, you must go into the ISO 9660 settings and deselect the "append version numbers (;1)" check box. The other important thing is that the tracks must all end with an .mp3 file extension and the name preceding must conform to the Joliet standard for Windows.—Joe Jillette

GLAD YOU FOUND SOME BALLS

I'm a middle-school computer teacher in the Bronx and I need help. The kids seem to really love mouse balls, so I'm missing quite a few now. I was wondering if anyone at *MacAddict* knows of a place where I could find balls for iMacs, as well as the caps or covers that hold them in. I found a place to buy balls (www.mouseballz.com), but can't find a place where I can buy caps.

—Jose R. Casado

We can't find one, either. We suggest you post a note on our forums page on the MacAddict Web site (www.macaddict.com/community/forums), and see if other Mac addicts can point you in the right direction.—Ed.

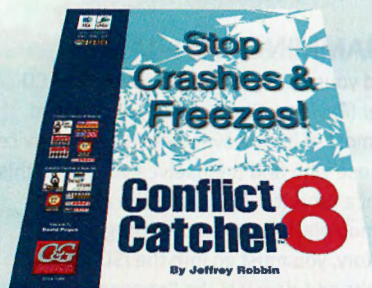
MONEY CAN BE EVERYTHING

You are right about the I-Jam's shortcomings. If you consider that a 32MB memory card for a \$250 to \$500 MP3 player costs around \$100, however, the I-Jam might be the only logical choice for listening to MP3s on the road and still having some cash in your pocket. I also have yet to hear it skip. But hey, don't let me stop you from spending over \$1,000 for the latest Rio-brand portable MP3 player and equivalent storage in memory cards, plus a portable CD Player—all to get the same functionality the I-Jam offers.—Michael Dexter

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the devil.**

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software...**

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above the rest!**



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- Manage your startup files!
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UPGRADE THE EDITORS

I've updated my UT software to 436. I just tried to log on to MacAddict.com for Frag the Editors Friday, and I got an error message that says the server software version is outdated. Do you think you could update soon? I would really appreciate it.—*Brian Bartle*
That error has been fixed.—Ed.

THIS IS WHAT IT SOUNDS LIKE WHEN MICE FLY

I hit your site almost every day and I buy your magazine. Life is good. But I have to say, the Apple Pro Mouse that arrogantly swings through the screen at its I-own-this-site pace is the most fingernails-across-the-chalkboard, irritating thing I have ever seen. Please get rid of it before my heart explodes and my eyes burst from my head from straining to read through it.—*Jason Hilton*

The bank vault-style wall between MacAddict's editorial and advertising departments works both ways. In the same way that advertising has absolutely no influence on editorial content, editorial opinion cannot influence what an advertiser chooses to place in paid space. Sorry about your eyes, though. It sounds quite painful.—Ed.

MORE OBLIQUE ANGLES

In your December 2000 issue's "Hack It In" article, you mention that the Commodore 64 "has less RAM than a modern digital camera" (*Get Info*, p20). I'm not sure why you chose this oblique comparison, but I thought you might like some more specific ones. At 64K, or 65,536 bytes, let's see how the Commodore stacks up to a few devices:

- A Palm Pilot IIIe—2,097,152 bytes (32 times the memory)
- A Hewlett Packard graphing calculator—524,288 bytes (8 times the memory)
- My American Express "Blue" card—262,144 bytes (4 times the memory)

Just thought you might be curious.—*Brett James*

QUESTIONABLE DISC ETIQUETTE

I am writing to communicate my displeasure at the inclusion of the Sindler's List shareware product on The

Disc. The combination of the program's name and its stated purpose to "keep a list of people who make you sick" and "get your vengeance to your enemies with style" are very offensive, for reasons I hope are obvious. I know this is primarily the developer's problem and not yours, but by distributing the software, you are effectively complicit in the offense. In my opinion, your decision to include Sindler's List among the shareware apps on The Disc is evidence of both poor judgment and poor taste.—*Adam Shyevitch*
We appreciate your pointing this out. We apologize for our failure to notice the tasteless humor of this title.—Ed.

MISPLACED TESTOSTERONE?

I have a beef with those fancy, sissy mouse pads with gel and spandex. They are all gimmicks. I have a very nice WWF mouse pad that could stomp a hole in those weenie pads. Wrestling mouse pads or no mouse pads...or one of those cool Wacom tablets. Yeah! —*Ian "lannihalator" Corbin*

READ THE INVISIBLE INK

I don't know if you guys are testing us or just checking to see if we actually keep our back issues. Ask Us in the December 2000 issue (p96) had a reference to "How to Turn Your Vinyl Records into Audio CDs," Jul/00, p80. I immediately pulled out my archived July issue, and hey—page 80 has no stinking article on burning vinyl. Where the heck is it?—*Andrew T. Lenz, Jr.*
The vinyl article is actually in the July 1999 issue on page 80.—Ed.

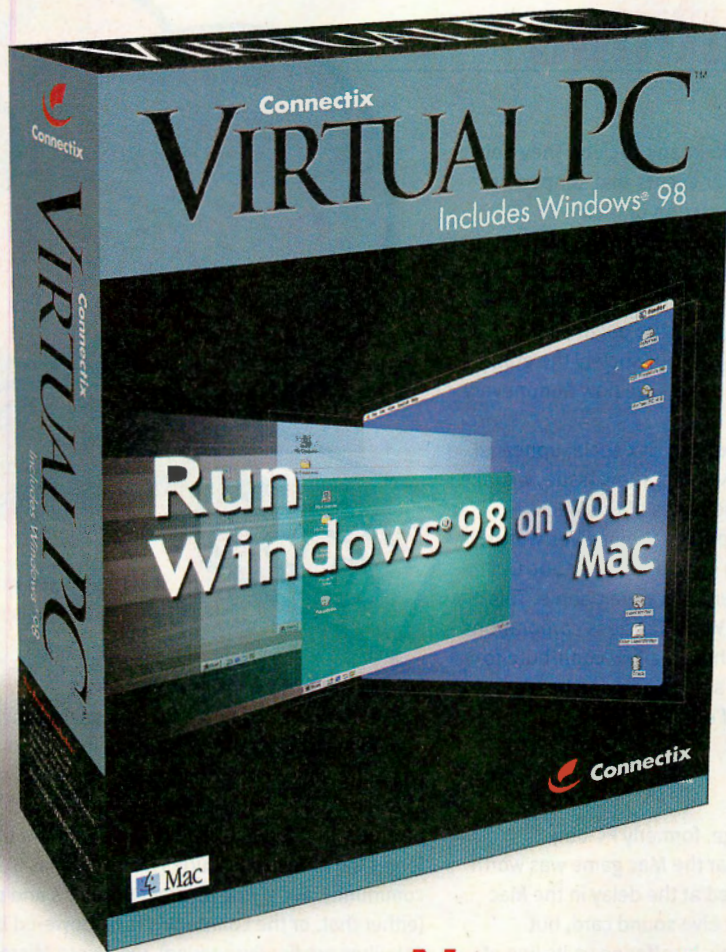
NO, GET INFO STAYS

With the upcoming release of OS X, are you going to change the name of your *Get Info* section to *Inspector*? It just doesn't have the same ring.—*Brannon Klopfer*

SNL MAIL

Hey, was that a copy of *MacAddict* I saw on a recent episode of *Saturday Night Live* (November 11, 2000)? It was behind Calista Flockhart on a bulletin board during the "Nick Burns: Your Company's Computer Guy" skit. Thought you might want to check it out! Keep up the great 'zine.—*Lysander Samoht*

A More Powerful Virtual PC



Now, up to twice as fast!

Virtual PC 4 puts a fast, powerful PC inside your G3 or G4 Mac, enabling you to run PC applications, access PC networks, share files with PC-based colleagues, and use PC-only services and applications. The latest version of this award-winning software from Connectix runs PC operating systems up to twice as fast as previous versions, so it's easier than ever for Mac users to stay compatible with the PC world.

What's new in Virtual PC 4? Improved features in Virtual PC 4 include faster performance, larger disk images, easier to use interface and help system, and the ability to run multiple PC operating systems simultaneously. Run PC software faster and better than ever with Virtual PC from Connectix. Go to www.connectix.com for more information or to purchase Virtual PC.

Come Visit us at Booth #1407 during Macworld SE.

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get info

Priming the pumps and plugging the leaks.

2001 Valentines

Worthy of Adoration

Traditions play an important role in any society. They help people celebrate and remember events that shaped or contributed to the social construction of their communities, plus they provide a common foundation for members of each community to share. In the case of Valentine's Day, the Roman king Claudius II, a martyr named Valentine, and the desire of the Christian church to remove the paganism from a festival called Lupercalia conspired to give our society the grand celebration of love—and greeting-card sales—we now honor every February 14.

That being the case, who is *MacAddict* to risk social upheaval and go against tradition? This is why every February issue, we take time to honor our valentines—those members of the Mac community who in the past year have proven themselves worthy of special adoration. We have added a special twist for 2001, however. In previous years, all our valentines were people. This year we've mostly chosen companies. While faceless corporations are often heartless moneymaking machines, a few contribute to the betterment of the community they serve. Included here are the ones we felt upheld the social fabric of our Macintosh subculture—romantic, aren't we?

Creative Labs

Creative Labs is one of a handful of large, formerly PC-only companies, who finally decided this year the Mac game was worth getting into. We are slightly disappointed at the delay in the Mac release of the company's SoundBlaster Live sound card, but Creative Labs more than made up for this by offering us its line of Nomad MP3 players, including the badass 6GB Nomad Jukebox. It always makes us swoon when companies finally see the light.

Apple's OS X Team

Like a lover who refuses to commit, Apple has teased, promised, lied, apologized, and stalled us on the topic of a modern operating system for years. Finally the OS X team shipped a beta and proved that it was ready to make honest users out of us. There are still a few details to work out, but it's nice to know the relationship has a future.

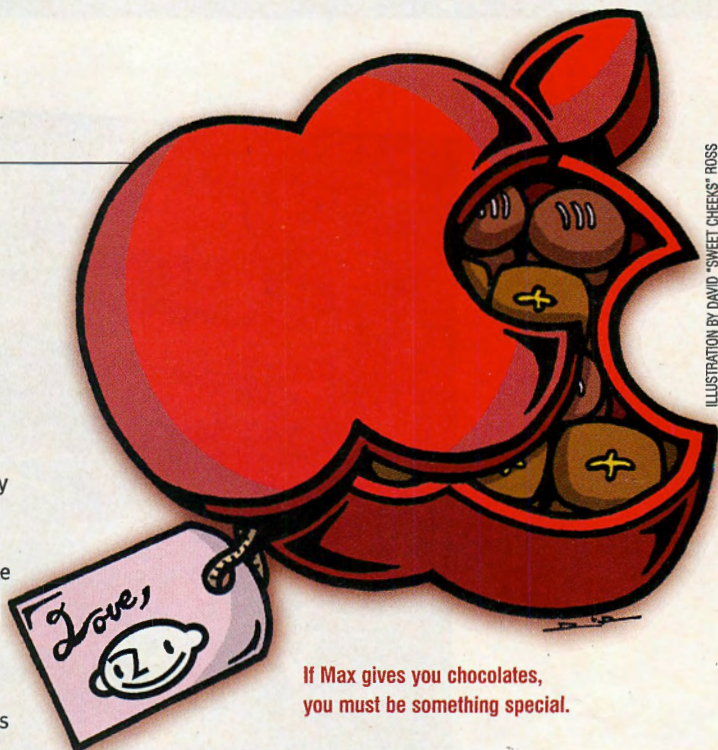


ILLUSTRATION BY DAVID "SWEET CHEEKS" ROSS

Microsoft Mac Business Unit

If, like us, you've caught a PC user gazing enviously over your shoulder at the slick new interface in Internet Explorer for the Mac, you know why we're honoring the company we hate to love. Microsoft's Mac team has come through with a string of solid Mac products that function and look as we want them to. And let's not forget the abrasive attitudes Microsoft has to deal with in the Mac community. For giving us great products and putting up with us (either that, or the company's high-powered brain-wave control satellites are finally working), we award Microsoft a valentine.

Alan Deutschman

OK, our last valentine isn't a company, but Deutschman's book *The Second Coming of Steve Jobs* managed to bring the excitement and intrigue of being an avid Apple follower back up to 1997 levels. Backdoor meetings at Condé Nast, pressure applied to executives of Random House—even we got called for comment on rumors that Steve Jobs was waging an ongoing campaign to hamper the book's publication. Whether fact or fiction, it made good reading and added further to the legend of Jobs.—RC

Antivalentines

Not everybody treats the Mac and its users with the respect they deserve. As it is tradition to honor those who did right by us on Valentine's Day, it is also tradition to poke those who did wrong with a sharp stick. Here are those we'd like to impale in 2001.

Netscape/AOL/Time Warner

Quit merging and buying companies and recognize that your browser has turned to crap.

MetaCreations

Thanks for buying every existing cool graphics app that didn't come from Adobe or Macromedia, then sending them all to nonexistence. We appreciate that.

Motorola

Fighting with IBM and locking up the PowerPC at 500MHz—DEC never looked so good.

Listen to Me!

Mikes for your Mac

Apple's introduction of the iBook in July 1999 officially put the standard audio-in jack on the endangered-input list. Taking matters a step further, Apple also forewent an audio-in jack on the G4 Cube—a signal that the 1/8-inch plug may one day join SCSI and ADB

in obsolescence. Don't fret too much, though—peripheral manufacturers have been hard at work coming up with USB and FireWire alternatives. Here a few of the audio-in options already available.—DR



Jamaica (VXI)
\$69.95
(800-742-8588,
www.vxicorp.com)
Despite the colorful name, this headset mike is gray, but the audio signal is good enough for ViaVoice.



Roland UA-30 AudioCanvas (Edirol)
\$248
(800-380-2580, www.edirol.com)
It's overkill for recording system beeps, but digital audio enthusiasts who long for the styling of the G4 Cube will let out a cheer for the UA-30. This handy device sports some serious USB audio capabilities, including several audio input and output options and mix controls for adjusting input and monitoring levels as you go.

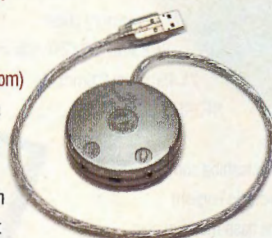


NC-7100 Apple-Compatible Headsets (Andrea Electronics)
\$79.95
(800-442-7787, www.andreaelectronics.com)
This is the Andrea USB headset model recommended by IBM for use with its ViaVoice voice recognition software.

iVoice (MacAlly)
\$69.95
(626-338-8787,
www.macally.com)
This USB microphone has a few bonuses, including external microphone jacks and a built-in volume control.



iMic (Griffin Technology)
\$25
(615-255-0990,
www.griffintechnology.com)
The iMic adapter is not a microphone, but it offers audiophiles a choice of channeling audio through a 1/8-inch jack or via left and right RCA stereo inputs.



Studio (Formac)
Under \$500
(877-436-7622, www.formac.com)
This audio and video digitizing device uses FireWire instead of USB, but it can gracefully handle stereo audio and almost any kind of video you throw at it.



Size Matters

Balancing MP3 Size with Quality

| SONG AND ARTIST | GENRE | WHAT IT SOUNDS LIKE | SUGGESTED BIT RATE | FINAL SIZE | WHY? |
|---|-----------------------------|---|---|--|--|
| <i>Black Dog</i> by Led Zeppelin (time 4:56) | '70s hard rock | Early '70s hair-rock. Early '70s equipment with limited fidelity and editing functionality. It sounds like music some of your parents might have listened to. | 128 Kbps stereo (.9 MB/minute) | 4.5MB | Classic rockers love this song. They tend to ignore the sloppy playing and "old-sounding" audio quality. 128 Kbps won't make an old recording sound older. |
| <i>Caravan</i> by Wynton Marsalis Quartet (time 8:20) | Smooth jazz cat | Trumpet, drums, bass, piano. Put 'em together, and you can kind of guess what it sounds like. | 192 Kbps stereo (1.3 MB/minute) | 11.4MB | Well-recorded jazz sounds best on good speakers. But if carrying a hi-fi system while jogging isn't an option, 192-Kbps encoding will retain the nuances of the instruments. |
| <i>Mr. Roboto</i> by Styx (time 5:30) | Arena rock on Broadway | Pretentious, melodramatic, synth rock-and-roll for the "modern" man. You either hate it or worship it. | 64 Kbps mono (480 KB/minute); 256 Kbps stereo (1.8 MB/minute) | 2.5MB for 64 Kbps, 10.1MB for 256 Kbps | If you have to keep to this song on your MP3 player for whatever reason, 64-Kbps encoding will sound so bad you'll have an excuse to skip to the next song before going mad. For Styx disciples, though, 256 Kbps is a must. |
| <i>Push It</i> by Static X (time 2:34) | Rivet-head industrial metal | Loud, gravelly, "shouty" vocals atop a loud, grungy, heart-palpitating industrial bed of noise. Induces reckless driving habits. | 160 Kbps stereo (1.1 MB/minute) | 2.9MB | Punchy bass and transient high frequencies can induce biochemical changes in the listener. We want to keep that effect. 64 Kbps mono lessens the tendency to defy authority. |
| <i>Ombra cara di mia sposa</i> sung by Nathalie Stutzmann (time 9:37) | Opera | A beautiful aria by George Frideric Handel, sung by Nathalie Stutzmann, the French contralto whose early...ah, forget it, it's opera. | 160 Kbps stereo (1.1 MB/minute) | 11MB | Classical music requires higher bit rates to reproduce the subtleties of the instruments, and in this case the voice. 160-Kbps encoding is adequate for this particular piece. |
| <i>Remember</i> by BT (time 8:00) | Pretty techno | Four-on-the-floor electronic music, awash with lush synthesizers and unintelligible lyrics sung by a faceless but presumably gorgeous diva. | 128 Kbps stereo (.9 MB/minute) | 7.3MB | Ambient electronic music is by nature very rich in audio texture. It is also prone to extended 74-plus minutes mixes. To fit them all on an MP3 player, don't go higher than 128 Kbps. |
| <i>The South</i> by Chris Rock (time 0:46) | Sociopolitical spoken word | Angry yet lighthearted standup comedy about the weather and conditions of living in "the South." | 64 Kbps mono (480 KB/minute) | 368K | Stand-up comedy is all about the subject matter. You don't need high fidelity when listening to rants about the drawbacks of minimum wage and social concerns raised by hair weaves. |
| <i>Highly Illogical</i> by Leonard Nimoy (time 2:23) | '70s cheese | There are traditional Trekkies, and there are Trekkies who listen to classic recordings of their idols. This song is high up in the cheese category. | 64 Kbps mono (480 KB/minute) | 1.1MB | Why, exactly. |

Small Storage Madness

Until We Get the CompactSmartStick, It's Name That Disk!

Thanks to the rapid growth of the “small gizmos that cost you about a grand when you inadvertently step on them” category (which includes MP3 players, digital cameras, and robotic dogs), the market for tiny storage devices has exploded. These storage mechanisms have some exacting requirements: They must be small

enough to fit into these gizmos and cheap enough so they don't create unfortunate cardiac incidents in electronics stores. So far, the industry has managed to avoid standardization with a vengeance—at least five competing technologies will soon vie for the market. Here's a quick look at the field.—IS



PocketZip (formerly Klik!)

PUSHED BY: Iomega (www.iomega.com)

TECHNOLOGY: Magnetic (like a full-size Zip disk, only smaller)

SIZE AND WEIGHT: 54.9mm by 50.1mm by 1.95mm, 10g

STORES: 40MB



Memory Stick

PUSHED BY: Sony

(www.sony.com)

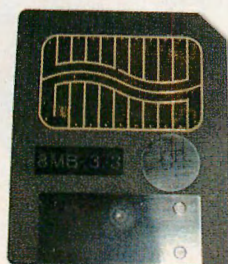
TECHNOLOGY: Flash

memory chips

SIZE AND WEIGHT: 50mm by

21.45mm by 2.8mm, 4g

STORES: Up to 64MB



SmartMedia

PUSHED BY: Toshiba (www.toshiba.com);

SSFDC Forum (www.ssfsc.or.jp/english)

TECHNOLOGY: NAND-type flash memory chip

SIZE AND WEIGHT: 37mm by 45mm by

0.76mm, 2g

STORES: Up to 128MB



iD PHOTO (coming early next year)

PUSHED BY: Sanyo

(www.sanyodigital.com)

TECHNOLOGY: Magneto-optical

SIZE AND WEIGHT: 59.5mm by

56.5mm by 4.8mm, 13g

STORES: 730MB



CompactFlash

PUSHED BY: CompactFlash Association (www.compactflash.org)

TECHNOLOGY: Flash memory chips (different types, depending upon manufacturer). A newer CF+ specification allows magnetic storage (miniature hard drives).

SIZE AND WEIGHT: 43mm by 36mm by 3.3mm, 11g

(16g for CF+ hard drives)

STORES: Up to 128MB (up to 1GB for CF+)

MacAddict Maclibs

A Morning in the Life of Steve Jobs

Ever wish you could control Steve Jobs for a day? Well, writing a Maclib about him may not be as fun as actually operating his brain via a remote-control joystick, but it's as close as you're going to get with our help. Here's how it works: Grab a friend who's ready to rattle off a list of words to replace the red, underlined descriptions

throughout the story (don't let him or her see it), then read it back using the words your friend chose. If the result is especially funny, send it in to Maclibs c/o MacAddict Editorial, 150 North Hill Dr., Brisbane, CA, 94005—who knows, maybe we'll print it. Let's just hope major corporation that owns copyright on Madlibs doesn't sue us first.

On a adjective morning in month, Steve Jobs woke up, turned on his electronic device, and checked the traffic report, which was very adjective. “Oh, expletive,” he said, “Looks like I won't be driving my wheeled vehicle to work today. I'll have to take my pick exact aircraft model.” He action verb out of bed, opened his closet, and picked out his favorite color turtleneck, and a pair of type of jeans.

Jobs had a few minutes to wait while the above aircraft model warmed up, so he went to his study, turned on his fruit flavor iMac DV, and launched iMovie to do a little editing on his family event video before eating a hearty breakfast of lowfat vegan food.

Once at Apple headquarters in Cupertino, Jobs parked his above aircraft model and entered his adjective office. Before getting

down to work, he decided to play a quick game of first-person shooter with his trusty noun, Phil Schiller.

The first meeting of the day, scheduled with the advertising firm Chiat Day, was about creating a television commercial for the brand-new nonfruit color iMac DV SE. With the same price tag as the current iMac DV SE just bought by thousands of emotion people, this new iMac DV SE contained a Gnumber between 1 and 10 processor, number between 200 and 800MB of RAM, and a number between 50 and 100GB hard disk. Of course, Apple would bundle it with iMovie any number and AppleWorks number less than 7. Jobs insisted that the song for the commercial be song associated with nonfruit color.

Next, it was time for lunch. Jobs went down to the Apple cafeteria and ordered the vegetable with starch-based food sautéed in spice.

Jobs devoted the afternoon to meetings with OS X developers regarding the new level of readiness for OS X applications: type of coffee. While same type of coffee is not quite a Cocoa app, it's beyond a Classic app. At the end of the meeting, he assured developers that the final version of OS X would be available no later than a date at least three months away.

At time, Jobs was ready to go home for the day. After playing a quick game of third-person shooter with his trusted noun, Phil Schiller, he boarded his above aircraft and flew on home.—NR

droolworthy

PV290 DSK

Panoram Technologies | www.panoramtech.com/pv290dsk.htm | \$22,750

We thought the Apple Cinema Display was the ultimate flat-panel monitor, but we were wrong. Oh, so wrong. Terribly, horribly wrong. The PV290 DSK beats up on the Apple Cinema Display like the latter was a scrawny nine-year-old with lunch money behind a 7-Eleven. The PV290 DSK boasts three flat-panel displays (and yes, it requires three video cards) in a single enclosure, with a separation of mere millimeters between the panels, making for a near-continuous panorama. The display area measures 43.5 by 11.5 inches (for a total resolution of 3,840 by 1,024 pixels, or 1,280 by 1,024 per panel), and it has 12 video inputs, so you can display other things besides your Mac's video. Although the USB calibration software is Windows 98 only, the monitor has a set of manual controls at the base for those of us who have better sense than to run a Wintel machine. Better start bench-pressing now, though—this übermonitor weighs in at 80 pounds.—DR



Hey—Tom Cruise just flipped me off!

Rock 'n' Ride Personal Motion Simulator

Cyberspace | www.cybermind.de/cyberspace | \$1,300



'Taint no 'lectrick bull!

Ever had a chair throw you around? The Rock 'n' Ride gaming chair can. It physically moves you according to how your game controller moves while you play, using a combination of great balance points and a small air compressor. The chair boasts 55 degrees of motion, enough to make veteran gamers a bit sick. Although originally built for the PS/2 port on a PC, the company says the chair will work with your Mac, provided you use the proper adapter. The chair's manufacturer is a German company, but it has a U.S. distributor. Check the Web site for more details.—DR

Shareware Pick of the Month

GraphicConverter 4.0

PRICE: \$35 URL: www.lemkesoft.com

If you haven't had a chance to try out the venerable graphics shareware program GraphicConverter, you really need to get out more. GraphicConverter can open almost any graphics file format known to humankind, many of which are so obscure that *no one* has ever heard of them except the program's author. Remember the TRS-80 graphics file format? GraphicConverter can handle it. In addition to acting as the Rosetta stone of pixel pushers, GraphicConverter can batch-process files, create slide shows, edit photos or perform photo-editing tasks, and run effects filters on images. Plus, it's AppleScriptable and it can even grab images from a scanner through its TWAIN plug-in.

The application has finally been promoted to version 4.0, and the latest version boasts hundreds of new features, import formats, and bug fixes. The list is truly staggering, but it's too long to print, and some of the new features are obscure. For Mac OS X fans, GraphicConverter 4.0 is the first step toward a Carbonized version.—DR

GraphicConverter can make even Yosemite look better, and it uses floating palettes to give close-up views and overviews as well as position and file information.



Input Device Freak Show

Mice and Keyboards That Stray from the Norm

The world of keyboards and mice can be a bizarre and eerie place, should you venture too far from the familiar. Here we've assembled some of the stranger-looking specimens you'll find on the market.—CL



EXPERT MOUSE PRO

\$100 (ESP)

Kensington (www.kensington.com)

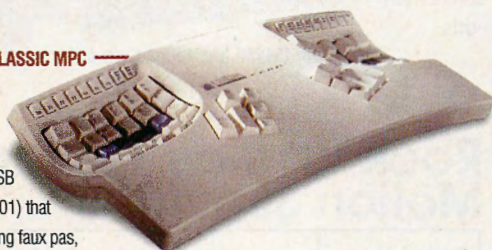
Although it could pass for a model of a space-age DeLorean, this USB trackball mouse does indeed help you navigate your Mac. The six DirectLaunch buttons on top are ideal for jettisoning you to your favorite apps and Web sites.

KINESIS CONTOURED KEYBOARD CLASSIC MPC

\$315 (SRP)

Kinesis (www.kinesis-ergo.com)

Ergonomically correct takes on new meaning with this ADB keyboard (a USB version should be available in early 2001) that promises to right just about every typing faux pas, including bent wrists, tense forearms, and slouchy palms.



CORDLESS TRACKMAN FX

\$79.95 (SRP)

Logitech (www.logitech.com)

The Cordless TrackMan FX, with a giant eyeball-like trackball and a detachable wrist pad in tow, loses the cord in favor of a small receiver that plugs into your USB port and takes in signals from the mouse.

WHALE MOUSE

\$69.95 (SRP)

The Starfield Group (www.ergostar.com/whale.shtml)

Although to us it resembles a stingray more than a whale, this ADB mouse is unique for one reason: You can stretch and shorten the mouse lengthwise by up to 1.5 inches so that it fits any hand.



3M RENAISSANCE MOUSE

\$69.95 (SRP)

3M (www.3m.com/cws/renmouse.html)

This USB ergonomic stick mouse from 3M comes in two different sizes and colors and challenges you to "feel the difference." Oh yeah, baby...

The Fix Is In

Version 6 Once Again Makes Premiere a Contender

A few months after the release of the completely redesigned Adobe Premiere 5 in May of 1998, the original QuickTime editing app experienced a swift and severe beating at the hands of rookie upstart Final Cut Pro. Though Final Cut costs about \$100 more than Premiere 5, its easy-to-use interface, efficient setup, and built-in compositing tools make Final Cut a bit more dynamic overall. After over a year and a half of nursing its wounds, however, Adobe is finally fixing for a comeback in the prosumer video-editing arena. With a refined interface and setup, as well as a battery of completely new talents, Premiere 6 is poised to take back its video editor title.

Like every other company in the desktop video field, Adobe took notice of the large swing to digital video during the past several years. Now it aims to capitalize on the DV format's advantages. For starters, Premiere 6 offers a wide range of DV presets for setting up projects and thoroughly incorporates DV into its device control setup. Additionally, the program now offers support for DV's wide-aspect ratio.

One of Premiere 6's most appealing promises lies in its revamped audio interface, which resembles a traditional mixing board. This interface promises unparalleled control over a project's audio tracks, enabling users to adjust the gain and balance of tracks easily, as well as mute or solo tracks. Premiere 6 also features a record function that allows users to record real-time changes to the audio settings, then play them back along with the video.

One of the advantages Premiere previously had over Final Cut Pro for Web and CD-ROM makers was its ability to export directly to Media Cleaner. Adobe has improved this relationship—Premiere now comes intertwined with its own special version of Cleaner 5, allowing fine-tuning of compression settings. Premiere 6 is also set up to export directly to RealMedia or Microsoft Media formats, if you're into that kind of thing.

Other highlights include Web Markers, which tell a movie to launch a Web page when it reaches a specific frame, and the addition of Adobe's popular History palette. The new Storyboard window and Automate To Timeline function work together; users can organize clips in the Storyboard window and then have the clips placed sequentially in the Timeline. Not to be outdone by Final Cut's compositing capabilities, Premiere 6 will support Adobe AfterEffects plug-ins, lending the program a massive range of filters and effects.

Premiere 6 is scheduled to ship in the first quarter of 2001 and will require a PowerPC (300MHz for DV), 32MB of RAM (128MB recommended), QuickTime 4.1.2 or higher, and modern Apple FireWire for DV. At the reduced price of \$549 new and \$149 upgrade, Premiere 6 just might become the best choice for post-iMovie video jockeys.—RC

Come see us at
Macworld Expo booth #2211!

MacSOHO?TM It rocks!

If your small office has a Mac and PC that need to share files, then you need MacSOHO, from Thursby Software. MacSOHO is the easiest, most cost effective way for your Macs and PCs to become best friends. It's fast, really fast, and secure and it's so simple to use and easy to install on your Macintosh, you'll think it rocks! MacSOHO, the perfect solution for your home or small office.

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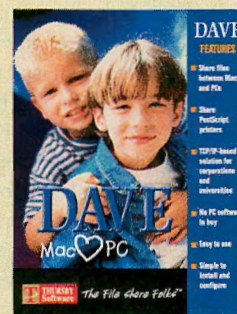
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USB 2.0 Charges In

USB Jumps to FireWire-like Speeds

The peripheral landscape Mac users have become familiar with over the last year and a half—USB for low-speed peripherals, FireWire for high speed—is about to be shaken up. The second generation of USB (named, with Intel's usual imaginative flair, USB 2.0) has begun to arrive. The new standard leaps ahead of the pokey 12 Mbps for the original USB we've become accustomed to. In fact, it blasts all the way up to 480 Mbps, edging out FireWire's current 400 Mbps speed limit. These two interfaces will come into direct competition next year.

Apple is thoroughly committed to FireWire and has yet to announce any support for USB 2.0. OrangeMicro (www.orangemicro.com) isn't waiting around for Apple's blessings, though, and has decided to go it alone and ship its own USB 2.0 card for the Macintosh. Doing so necessarily puts them in a daunting position—for the card to be useful, other USB 2.0 device vendors must provide Macintosh drivers for their products. To get the ball rolling, OrangeMicro is making its generic USB 2.0 drivers available for licensing, so peripheral makers can include them with any USB 2.0 peripherals they want to sell to Mac users.

FireWire fanatics shouldn't sweat too much, though—the standard also known as 1394 or i.Link is slated to leap to 800 Mbps, although no one will commit to an actual date, and there are plans on the board to push it as high as 3.2 Gbps. With such high speeds on the horizon and growing inclusion in consumer electronics (camcorders, game consoles, digital cameras, and so on), FireWire will be around for a while.—IS



If there were only a few USB 2.0-based peripherals to plug into it, you'd be set!

HACKit IN Making Stuff Work by Any Means Necessary

The ei Corporation's ThumbDrive

This month marks a first for "Hack It In"—we finally encountered a device so totally bizarre that we simply couldn't make work. Fortunately, the growing popularity of the Macintosh platform appears to be doing our job for us.

When we first encountered the ThumbDrive, by ei Corporation (www.eiware.com), we fell in love with it. The ThumbDrive is a small flash-memory storage device, much like a SmartMedia or CompactFlash card. Unlike those devices, though, the ThumbDrive was engineered to plug directly into the USB port. The ThumbDrive's form factor is just a thin stick that extends beyond the end of the USB port, making it potentially one of the most convenient storage mechanisms we've seen.

We optimistically plugged the ThumbDrive in and began a search for drivers that would let us mount the drive on our desktop. We immediately encountered problems. Our usual method of getting USB devices working is to check for drivers at the original equipment manufacturer's Web site. Unfortunately, the ThumbDrive didn't identify the OEM vendor in the Apple System Profiler—it just displayed a meaningless (to us) hexadecimal vendor code. Desperate, we pried open the drive, hoping to see what chip set it used. But we failed yet again—the drive consisted of two circuit boards mounted with chips facing back to back, so we couldn't see the backs of the relevant chips. Worse, we inadvertently damaged the drive while prying it open, ending any chance of getting it to work.

Despondent, we called ei Corporation, asking for information that might allow us to write our own drivers. The company saved us the effort—the ThumbDrive has been replaced with the slightly more stylish Q drive, which will feature Mac OS support! Watch for the upcoming drivers on www.usbmedia.com.—IS



This wretched little stick did us in—but it has a Mac-savvy successor, so we've won the war.

PHOTOGRAPH BY GABRIEL LAUER

TECHinfoTIDBITS Random Notes from the TIL

We've Found the Latest Version of the Apple Spec Database!

- Although the terms IDE (Integrated Drive Electronics) and ATA (AT Attachment) are used interchangeably to refer to storage device interfaces (mostly hard drives), the more proper term is ATA. You may also hear the terms ATAPI (AT Attachment Packet Interface), which refers to storage devices that aren't hard drives, and EIDE, which stands for Enhanced Integrated Drive Electronics, and usually refers to Western Digital drives that use a faster ATA interface.
- Adding RAM, VRAM, or other upgrades that you can install at home doesn't violate your Mac's warranty, because Apple doesn't consider it a modification to the hardware.
- If you have a Power Macintosh G4 with a DVD-RAM drive and a second DVD-RAM disk says it has the same amount of free space as the first, you've hit a bug in the Mac OS. Shut down your Mac and restart it whenever switching DVD-RAM disks to avoid losing data. Apple is aware of the problem and has promised an OS update to fix it.
- If you're looking for technical specifications for your Mac, the Apple Spec Database is available through your Web browser. Go to (<http://support.info.apple.com/applespec/applespec.taf>) to look up details on almost any system that Apple ever sold.

Apple's Tech Info Library at <http://til.info.apple.com> serves as the source for these info-nuggets, and it knows more than you do about Macs.—DR

There's always room for Belkin.



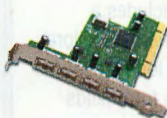
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Scrapbook

Netscape 6 enjoys a close probe.

Netscape 6

by David Reynolds

It seems like forever since Netscape released a new browser. Wait—that's because it *has* been forever. Still, after many, many months of hanging out at version 4.7 (released in September 1999), Netscape released the Java-based version 6 of the once-dominant Web browser. (Version 5 is an open-source project, which, like all other open-source projects, will never be finished.) Here's how it looks under the microscope.

Shiny, Rounded Interface

Like just about every other bit of software out there, Netscape 6 has succumbed to skin mania. You can now swap out the browser's appearance, or what Netscape calls Themes. You can switch your Theme by selecting a new one from the Apply Theme submenu in the View menu, and you can download new Themes by choosing Get New Themes from the Apply Theme submenu in the View menu.



Remind You of Another Browser's Interface?

Netscape 6 includes a slide-out sidebar with a series of tabs you can rearrange, remove, and customize.

Module Buttons

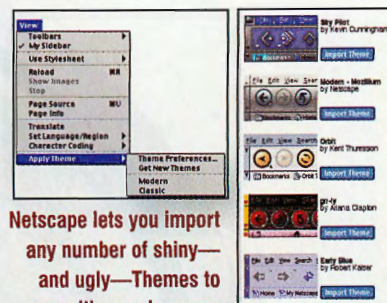
The other Netscape components—Mail, Instant Messenger, Composer, and Address Book—are just a click away. Another sign that AOL has further digested Netscape—AOL Instant Messenger is now an impossible-to-remove part of the browser.

Built-in Bookmarks

It's like having categorized Netscape-supplied bookmarks built right into your window! Exactly like that.

Filled-in Forms

Netscape 6 includes a feature that Internet Explorer has had for a long time—the ability to fill in form fields automatically. Netscape's version goes much deeper, though, asking for such information as credit card numbers, billing details, shipping addresses, and spouse information.

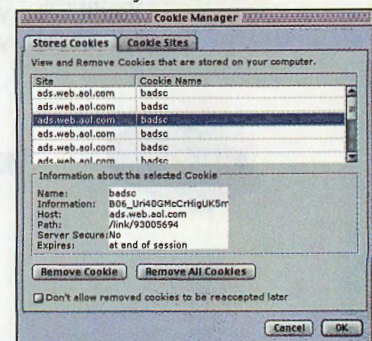


Netscape lets you import any number of shiny—and ugly—Themes to use with your browser.

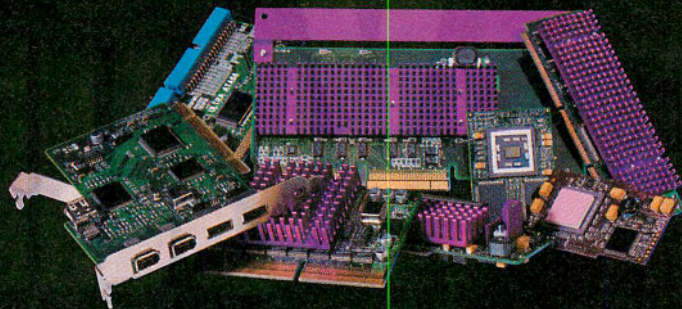
If a more standard look and feel appeals to you, choose Classic from the Apply Theme submenu in the View menu to return to yesterday.

Cookie—yum yum yum

These ads probably have cookies behind them, and you can use Netscape's new Cookie Manager to examine and remove cookies from your browser.



The cookie-crazy out there will appreciate Netscape's new cookie manager.

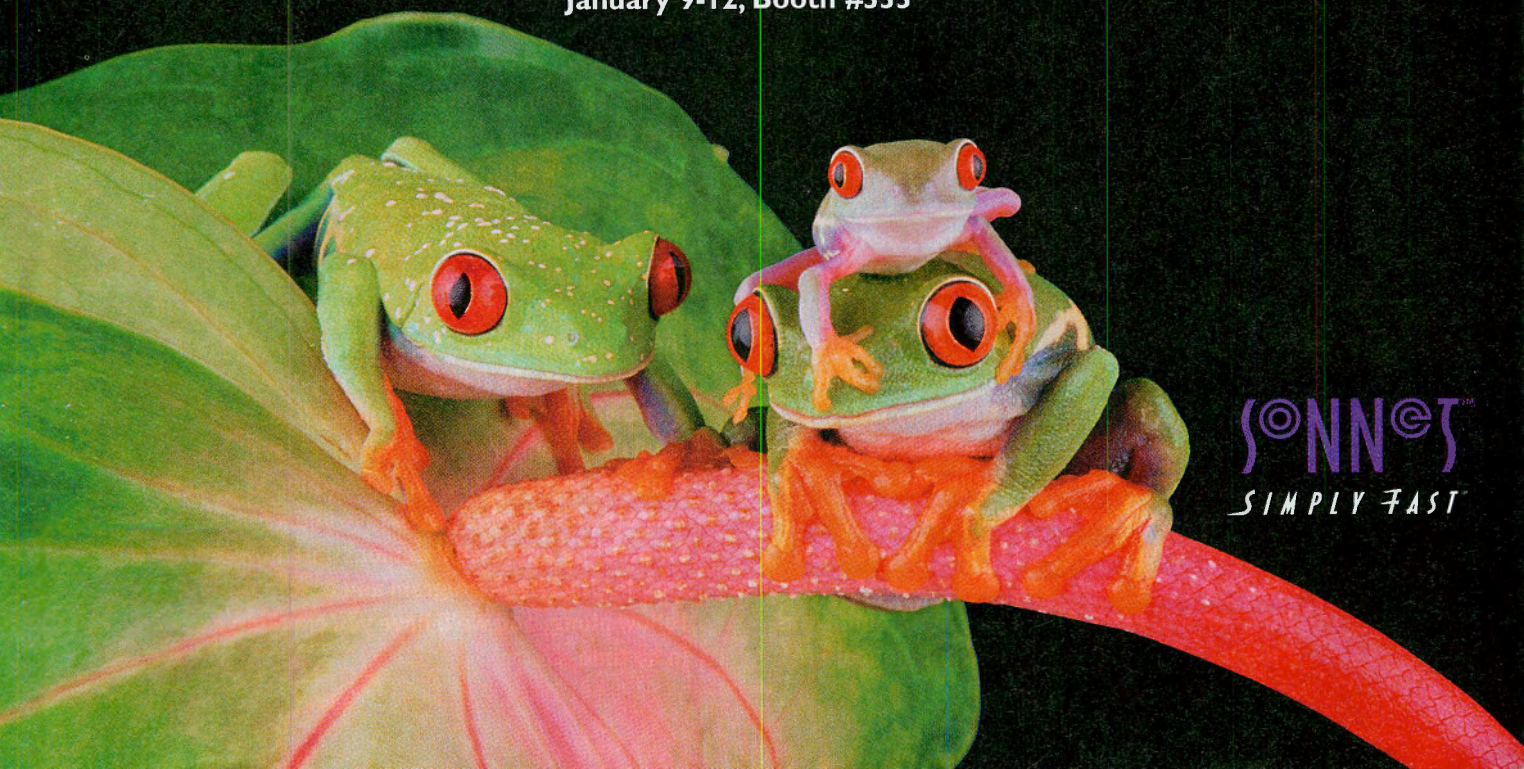


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Build Your Own Apps

Can't find the program you need? Then make it yourself.

by Ian Sammis illustration by Robert Rose



Find RB
Checkbook,
MaxWP, and a
REALbasic demo
on The Disc.

It's bound to happen sooner or later if it hasn't already—use the Mac for long enough, and you'll eventually want a type of software that simply doesn't exist for your platform. Sure, the Mac's got the major categories covered, but it doesn't have software for every hobby, business, and profession you might need.

When that day comes, what will you do—run sobbing to the nearest computer store, selling your soul for a software package? Heck, no! Write a thousand angry email messages demanding a Mac version? Of course you will, but that's generally about as effective as trying to fix a leaking gas pipe with an arc welder. Most small programs are written by folks who can barely handle one platform—ask too many times for a Mac version, and you're more likely to get “Macs suck” rhetoric than wish fulfillment.

So what will you do? Write it yourself!

If you're brave enough to elevate your Mac abilities to the next level, take a stab at writing the program you need. Although programming has built up a formidable mythos (popular culture

depicts it as a black art performed by mysterious, white-shirted geeks fueled by pizza and soft drinks), it isn't nearly as hard as the rumors make it seem. Sure, you might find creating your own version of Half-Life a tad difficult, but there's no reason you can't build smaller apps to, say, keep track of your giant petrified goldfish collection.

To help you make the transition from casual Mac user to bona fide Mac programmer, we've prepared the following guide. We'll show you how to create full-fledged programs quickly using Real Software's app-building tool, REALbasic. If you've got a bit of programming under your belt and want to play with Mac OS X, we'll give you a rundown on how to do the same with Cocoa, Apple's framework for OS X development. We'll also mention PowerPlant, Metrowerks' application framework, but we'll defer a full treatment of PowerPlant to our Web site. You'll probably be designing your programs to meet your own specific needs—but to give you a foundation for building apps, we'll demonstrate how to make a simple checkbook program and a word processor. Follow along, and we'll have you cranking out code in no time.



Application Lowdown

The three development environments we describe serve entirely different purposes.

REALbasic, by Real Software (www.realbasic.com), is a Rapid Application Development tool. While it's not quite as versatile as a traditional compiler such as Metrowerks' CodeWarrior, REALbasic makes it tremendously easy to create custom applications in a fraction of the time hand-coding takes. REALbasic is also the ideal tool for someone who's learning how to build an application—it automates the grunt work of programming by relying on its own premade libraries of code. This gets you right into making full-fledged Mac OS applications, skipping the interminable seventies-era line apps most programming introductions require you to learn first. Unfortunately, REALbasic's automation features also limit the scope of what you can make.

Cocoa, by Apple (www.apple.com), is a powerful application-development system Apple acquired from NeXT. If you're playing with Mac OS X Public Beta and have geekish inclinations, you should really take the time to fiddle with Cocoa—it makes creating solid, full-featured apps almost ludicrously simple. It also gives you a good excuse to learn a new programming language.

PowerPlant, by Metrowerks (www.metrowerks.com), isn't a beginner's tool—using it requires a fair understanding of the C++ programming language and willingness to wade through an intricate system. Still, once you learn it, PowerPlant eliminates the most irritating part of Mac OS development. Writing "pure" Mac OS Toolbox code can feel like trying to whittle with your teeth—processing a simple click action for a radio button requires writing one piece of code to notice the click, another to observe that the click happened in a particular application window, another to figure out which control the user clicked, another to follow the mouse while the button is down—you get the idea. PowerPlant eliminates all that tedious coding.

Application 1: REALbasic Checkbook

Suppose you don't need complicated personal finance software—as long as you can balance your checkbook, you're pretty happy. Also suppose you don't want to buy the obvious candidate (you know, the one that sounds like kickin'), because you've had a grudge against that particular software vendor ever since it canceled the Mac version of a piece of business accounting software (sounds like kick hooks) you depended upon. What do you

do? Write a checkbook program—a task perfectly suited to REALbasic (what a coincidence!).

Of course, personal finance programs can get enormously complex, so we'll build a bare-bones checkbook app to start with. This is usually a good idea when you're writing programs—it's much easier and more rewarding to add features to a program that already works than to attempt to build the ultimate application on the first try.

The Interface

Designing the interface for your program is simultaneously the easiest and the hardest part of the job. Putting the pieces together is simple—in REALbasic you just drag the various controls, edit fields, and other elements from the Tools palette into the window you're designing. At the same time, making the pieces work together elegantly is difficult to do right—if you build a confusing, hard-to-use interface, no one (including you) will want to use your program.

When you start designing the interface, take a look at a real checkbook's register. Your checkbook program has to do at least as good a job of tracking a checking account, or why would anyone want to use it? The program must keep track of check numbers, amounts, payees, and memos (those lines that add a bit of extra information to each transaction—for example, "Merry Xmas," "Illegal bribe," or "Maybe now they'll quit with the friggin' renewal notices").

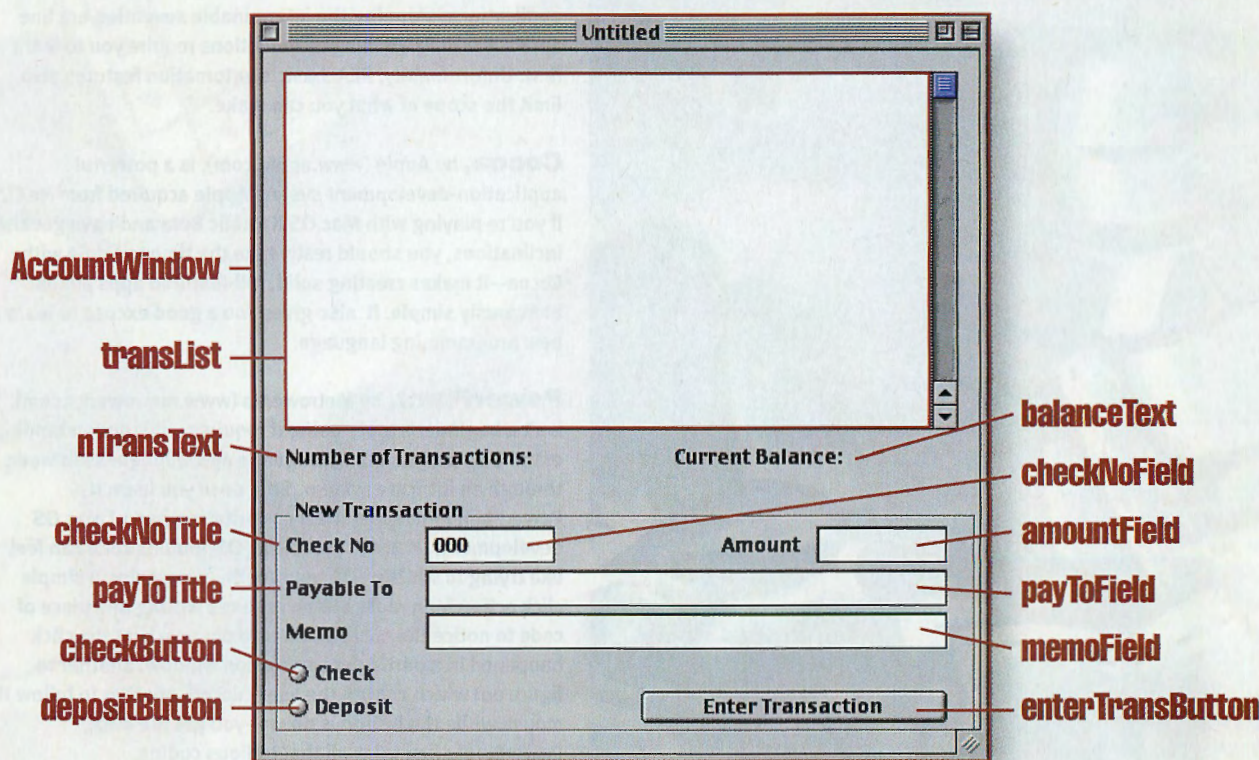
Names and Properties

When you create user interface elements in REALbasic, the program gives them default names like StaticText5 and EditField3 that say nothing about their purposes. If you leave those names intact, your code will be very hard to read because it refers to generic fields and buttons.

To name the various parts of your user interface, first click to select them. Then go to the Properties palette at the right side of the screen. This palette lists all the properties associated with the currently selected item, including its name. Just select the name in the palette and type a new one. Here are the names we used.

| Properties | |
|------------|-------------|
| ID | |
| Name | PayToField |
| Index | |
| Super | EditField ▼ |
| Position | |
| Left | 101 |
| Top | 323 |

By changing the names of the user interface elements in the Properties palette, you'll make your code a lot more readable.



Deposits and Withdrawals

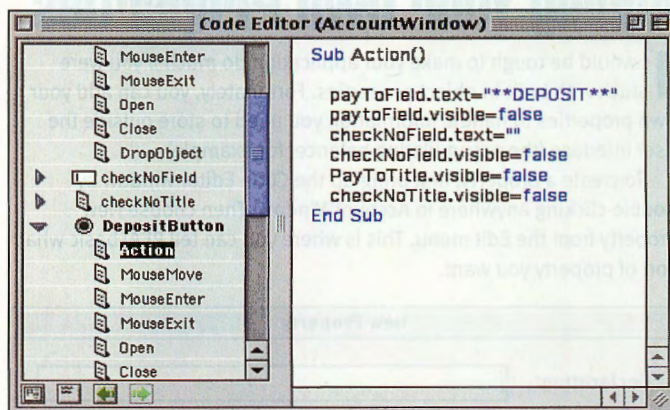
To start, let's clean up the interface so it displays the appropriate information at the appropriate times. Right now, it always displays checkNoField and payToField, even when you're trying to enter a deposit. You want the program to hide both of these fields when you select the Deposit radio button.

To hide these fields when you've selected the Deposit button and show them when you've selected the Check button, you'll need to create Action Events (see "Objects, Properties, and Methods," below) for each button. REALbasic preassigns a Boolean property called *Visible* to most user interface objects (in this case, our payToField and checkNoField titles); this determines whether they actually appear (remember, Boolean properties are either true or false). To hide checkNoField and payToField when you select the Deposit button, you create an Action Event that sets their Visible property to false. To show these fields when you select the Check button, you create an Action Event that sets their Visible property to true.

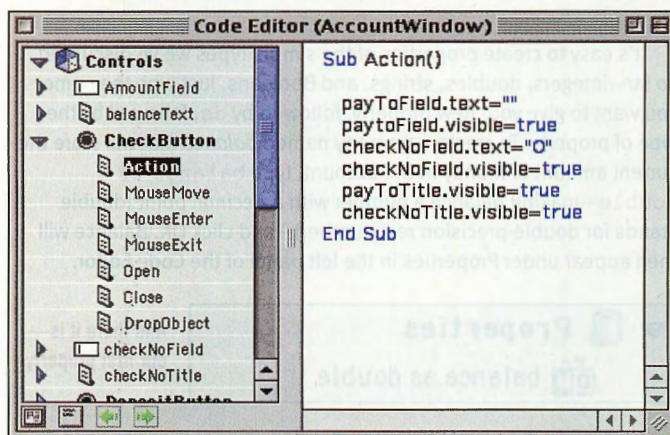
Double-click the Deposit button to bring up the Code Editor window, where you can add code to create methods (such as Action Events). REALbasic is moderately clever about which method it brings forward first—if you double-click a button, for example, it gives you that button's Action Event. If you want this Event to alter another object, you must write your first line of code. Click between the Sub Action and the End Sub lines in the pane on the right. Type the name of the object, followed by a dot, followed by the name of the property you want to change (the object's visibility, for example). Finish the command with an equal sign (=) and the value you want the property to have. For example, payToField.visible=false tells payToField to disappear.

While making these fields turn invisible, you should also set the editable text fields associated with the checkNoField and payToField objects to values that will let you know exactly what the transaction was when you enter it into transList. To put text automatically in these editable text fields (which REALbasic calls EditFields) when you check the Deposit button, type what you want the fields to say in quotation marks as the value for the EditField's text property.

Feeling a little lost? Take a look at the scripts to the right.



Here you hide the fields that aren't appropriate for a deposit. You also set their text to values so that when these transactions show up in a final list, they'll say ****DEPOSIT****.



Here's how to get everything set up for entering a check. Aren't you glad you gave those fields sensible names?

Objects, Properties, and Methods

REALbasic treats each of the user interface elements you've created as an *object*, a programming-language construct that has two basic components—*properties* and *methods*.

You've seen properties—they store information the object needs to function. There are four basic types of properties: integers (whole numbers like 23, 54, or -23), doubles (numbers with a fractional component like 3.4, -2.5, or 15.0), strings (groups of characters like "Hello," "Goodbye," or "I'm sorry to hear that, Dave"), and Booleans (either true or false). Properties can also be objects themselves, with their own properties and methods.

Methods are the actual bits of code REALbasic runs. Some special methods, called *Events*, execute automatically when something specific happens to the object containing them. Buttons, for example, have an Action Event that executes when a user clicks them. Most of this REALbasic tutorial will consist of writing Action Event scripts for the various buttons in our interface.

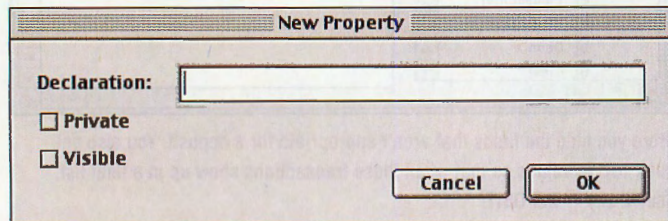
| Object | | |
|------------|-------------|---------------|
| Properties | | Methods |
| Name | "translist" | AddRow |
| Left | 13 | DeleteAllRows |
| Top | 13 | Cell |
| Width | 420 | CellBold |
| Height | 222 | CellItalic |

An object like translist has both properties and methods.

Adding Your Own Properties

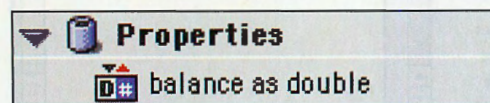
It would be tough to make your application do much if you were stuck with built-in object properties. Fortunately, you can add your own properties to handle information you need to store outside the user interface (the accumulating balance, for example).

To create a property, first bring up the Code Editor window by double-clicking anywhere in AccountWindow. Then choose New Property from the Edit menu. This is where you can tell REALbasic what sort of property you want.



All you have to do now is tell REALbasic what the new property should store.

It's easy to create properties of the simple types we've discussed so far—integers, doubles, strings, and Booleans. Just type the name you want to give your new property, followed by **as**, followed by the type of property. To create a property named *balance* that will store the current amount of money in the account, type **balance as double**—making *balance* a number with a decimal point (double stands for double-precision real number)—and click OK. Balance will then appear under Properties in the left panel of the Code Editor.

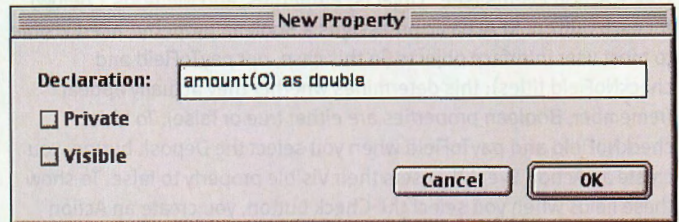


And there it is—our first property.

Next, make a new integer property titled *ntransactions* to keep track of the total number of transactions you've entered. To store the rest of the transaction information—who the checks went to, how much they were for, and so on—you'll need to store not just one value but entire *lists* of values, one for each of your fields (*checkNoField*, *payToField*, and so on) in any given transaction. The easiest way to store lists in REALbasic is with an *array*. Arrays are just numbered lists

of properties—instead of having a single property called *payTo*, for example, you could have *payTo(0)*, *payTo(1)*, *payTo(2)*, and so on, and each one could store different values.

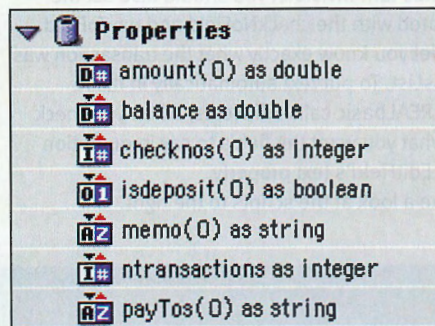
To create an array, you simply put a number—one less than the number of list items—in parentheses right after the name of the property. For example, to create a list of amounts with just one item in it, you'd type in the declaration shown in the window below.



This creates a list with one item in it.

The zero denotes the number of the last item in the list, *amount(0)*. Of course, it might seem silly to create a list of one, but as you don't know how many transactions a person is going to enter, you'll lengthen the existing list later on in the program.

Create a series of arrays to store all the other information (one for each editable text field). Also create an array called *isdeposit* to hold a field indicating whether each transaction was a deposit or a check. When you're done, your properties list should look something like the one shown below.



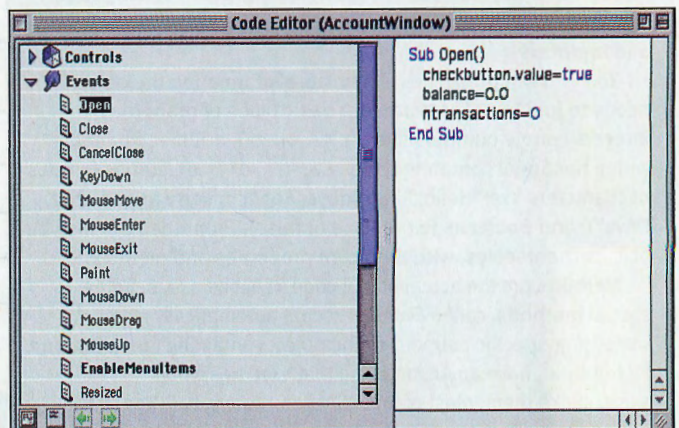
And there it is—the final list of the properties you should add to the program.

Starting Off Right

When the application first starts, all of those properties you've defined don't mean much. The program hasn't set them to anything, so they don't have any particular value. It's up to you to give them values that make sense.

Fortunately, that's not hard to do. At startup, the program opens the AccountWindow (showing the entire interface), triggering that window's Open Event. All you have to do is add your startup code to the Open Event, and you're all set! Technically, all the properties in this app belong to the main AccountWindow (you've built everything from that). Since you're setting this window's own properties, you don't need to type the whole name, *AccountWindow.ntransactions*; you can just type *ntransactions*.

As long as you're getting the program into its correct startup state, you might as well set the value property of the Check button to true—exactly one button of any bank of radio buttons should always be turned on, according to the Mac Human Interface Guidelines.



Just set *ntransactions* and *balance* to zero and *checkbutton.value* to true.

Adding Transactions

Now you're ready to add transactions by implementing the Enter Transaction button's Action Event. You add a transaction in two separate steps: First add a row to the transaction list (the main

window) describing the transaction, then add the various parts of the transaction to your arrays. Take a look at the Code Editor window below, which shows the code that makes all this work.

Local Variables

At the start of the method, you should declare local variables that you can use for temporary storage. To declare a local variable, type `dim`, followed by a declaration just like the ones we used earlier for properties. Here, you should define `d`, which will store today's date, and `transString`, which will hold the line that will get added to `transList`.

Increment `nTransactions`

Remember that the `=` (equal sign) here means set to, not equal to; this line sets `nTransactions` to one more than its current value. (We were a little sloppy with case here, but it doesn't matter—REALbasic doesn't care whether you use uppercase or lowercase).

Update the Balance

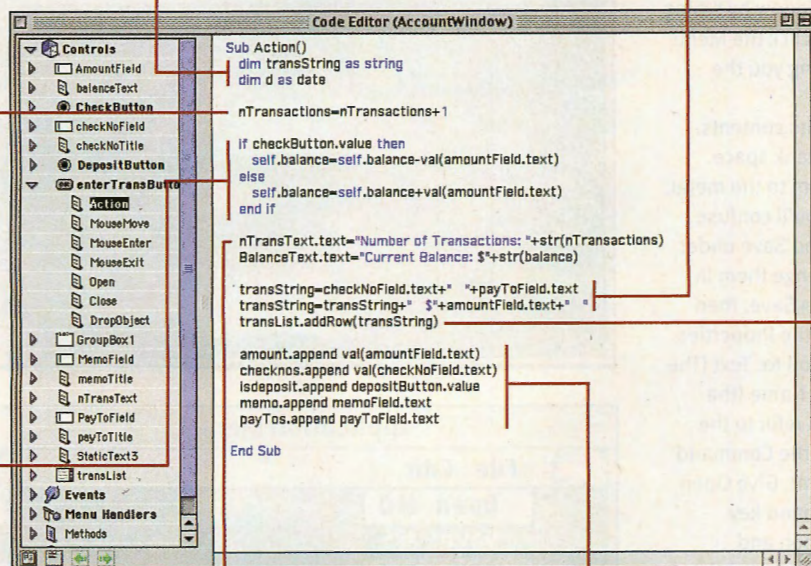
Here, you need to use an IF-THEN-ELSE block (see "IF, THEN, ELSE, END IF," below) to either increase the balance to reflect a deposit or reduce it to reflect a check. The `val` function turns a string into a number, so you can add it to balance (to a computer, the character "4" followed by the character "5" has nothing whatsoever to do with the number 45. After all, the former is a string, but the latter is an integer.)

Build the Transaction String

To build the string that the routine will add to the transaction list, you combine a number of other strings. Combine strings with the `+` operator—for example "Hello" + "World" is "HelloWorld". We've broken the statement into two lines to make the program easier to read.

Add the Row

To add a row to `transList`, you'll have to call one of its prebuilt methods—`AddRow`. Telling a method like `AddRow` to execute is very similar to setting a property; you type the object's name, a dot, then the name of the method. You follow that with parentheses, in which you put the information that the method requires to run (in this case, the string that you want to add to `transList`).



Update the Status Line

Now that you have the new balance and number of transactions, you can update the two static text fields below `transList`.

Array Appending

Arrays in REALbasic have some neat tricks that make them considerably more powerful than BASIC arrays traditionally are. One of the best is the `append` command, which you can use to add a new element to the end of the array (remember when we said you'd build the lists as you go?). To add an extra element, just type an array's name, follow it with `.append`, then type a space and the value you'd like to add to the array.

IF, THEN, ELSE, END IF

When a program needs to make a decision, you use an IF-THEN statement. In REALbasic, here's what it looks like:

```
if condition then  
    statements  
else  
    statements  
end if
```

When REALbasic encounters an IF statement, it checks the condition that follows IF. If that condition is true, REALbasic executes all the statements that follow THEN but precede ELSE. If the condition is false, REALbasic executes the ones between ELSE and END IF. The ELSE part is

optional, by the way—you can omit it if you don't want the program to do anything when the condition isn't true.

The simplest condition is a Boolean variable, but often you'll want something more complicated. You can compare numbers to see if they're equal (`=`) or not equal (`<>`), if one is less than another (`<`) or greater than another (`>`). If you want to know if one number is less than or equal to another, you can combine two symbols (`<=`). You can even build more complicated tests using `and`, `or`, and `not` operators. All this looks intimidating, but is usually very simple in practice. For example, you should be able to find a use for this line:

```
if amount > balance and depositButton.value then
```

Used properly, it might keep you from inadvertently writing bad checks.

Menus and Files

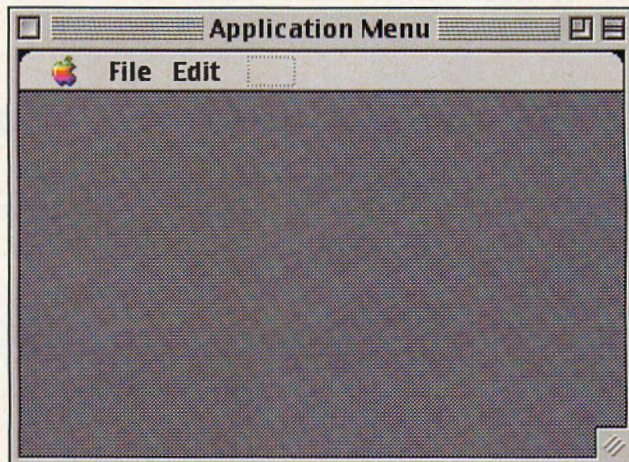
So you have a functioning checkbook, but you're probably wondering how you're going to save and open your transaction records. At the moment, you'd have to leave your checkbook program running 24 hours per day, and heaven help you if you ever have a power failure. Let's add features to the program so you can save and open your transaction lists.

Traditionally, you implement Open and Save as menu items. In REALbasic, building menu items is a three-step process: You first create the menu items, then enable them, then finally write menu handlers to implement them. That last step's the toughest—to save space, we'll just show you how to implement the Save menu item (Open is similar—look at our file on the Disc to see how it works).

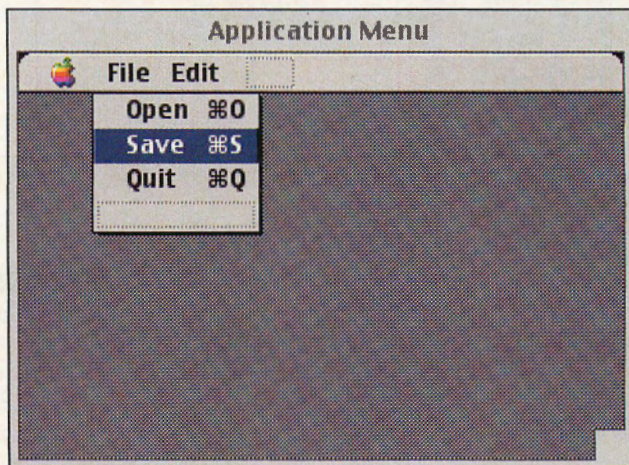
Create the Menu Item

First of all, you should add Open and Save commands to the File menu. To add menu commands, open the Project window by typing Command-zero (o) and double-click the Menu row. A window will open, showing you the program's current menu bar.

Click the File menu to show its contents. Below Quit, you should see a blank space. Click the space to add a new item to the menu. Create Open and Save items. You'll confuse people badly if you put Open and Save under Quit, so drag the items to rearrange them in the traditional order: Open, then Save, then finally Quit. Three properties in the Properties palette are worth paying attention to: Text (The actual name of the menu item), Name (the name by which the program will refer to the menu item) and CommandKey (the Command key equivalent for the menu item). Give Open and Save their traditional Command key equivalents: Command-O for Open and Command-S for Save.



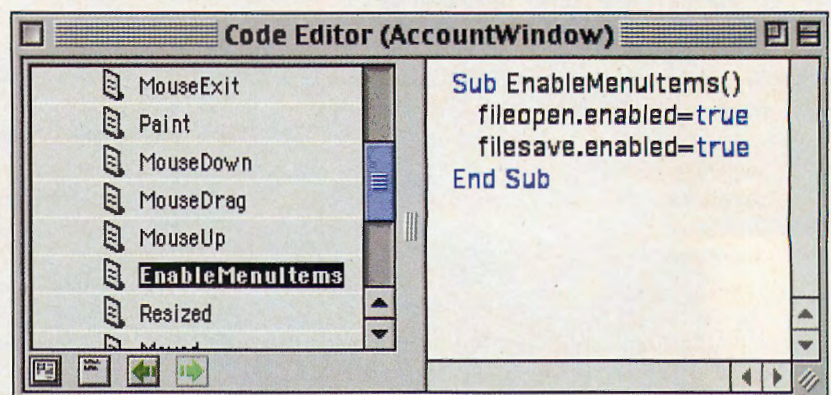
This window lets you create new menus and add items to existing ones.



Now the Menu bar looks the way you'd expect.

Enable Menu Items

There are two parts to implementing a menu item in REALbasic. First you have to tell REALbasic that it should enable the menu items—that is, that they shouldn't appear grayed out in the menu. Just set each menu item's enabled property to true in the window's EnableMenuItem method.



This simple method lets you use the Open and Save menu items.

Menu Handlers

Now you need to tell the menu items what to do by writing a special kind of method—a Menu Handler. Whenever a user chooses a menu item, its Menu Handler executes. To create a new Menu Handler, open the Code Editor and choose New Menu Handler from the Edit menu.

In the window that appears, choose the menu item for which you're writing a Handler. Let's start with the Save command.

Choose FileSave from the menu on the left, then enter the code shown below.

More Local Variables

These lines create *local variables* that behave like properties but that only exist while the current method is running. The first line contains an integer; the second contains the information REALbasic will need to find a place on the hard drive to store a file; and the third line tells REALbasic that it will soon be creating a text file.

Display the Dialog

GetSaveFolderItem is REALbasic's command for pulling up the usual Save dialog box. The two parameters are the type of file you want to create (text, in this case) and the default name for the file (Checking, in this case).

Check for Cancel

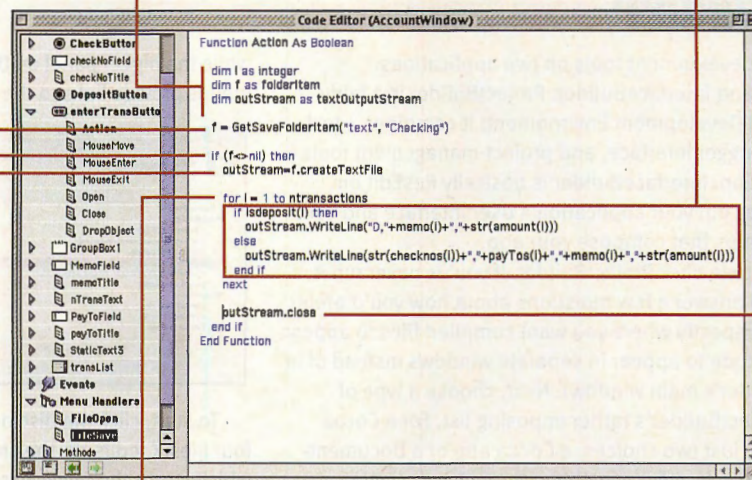
If the user clicked the Cancel button in the Save dialog box, *f* will be nil (it won't be storing anything at all). You have to tell the program to check for that value before trying to save.

Create the File

This line actually creates the new text file you want to save. The *f* variable (folderItem) stores the file's location on the hard drive; its createTextFile method creates a text file there.

Make Deposits

This instruction tells REALbasic to use a *D* for the deposit number if the transaction is a deposit, and to write the check number if it's a check.



Close Up

Now that the program's done writing the file, use a close line to tell the Finder to close that file.

Loop the Loop

This FOR loop executes the WriteLine instructions below exactly once for each transaction.

FOR-NEXT Loops

In the Save method, you have to write each transaction to disk. To execute the same statements repeatedly, use a FOR-NEXT loop. Here's a typical FOR-NEXT loop:

```
for i = 1 to 10
    statements
next
```

The first line tells REALbasic to set *i* to 1, then start executing until it hits the **next** instruction. When REALbasic hits **next**, it checks to see if *i* has reached 10 yet. If not, it adds 1 to *i*, then goes back to the line after the **for**. This lets you easily run through a list and execute the same statement each time. (One and 10 are just examples; you can use any values you'd like.)

Going Further with REALbasic

The program as it stands is functional but extremely simplistic. Here are some things you might consider to spice up your checkbook.

- Add a third type of transaction to represent a withdrawal from an ATM.
- See if you can actually cover a check before adding it.
- Allow modification of transactions after you've entered them.
- Have the program print the checks you create.

Keep watching www.macaddict.com/magazine/plugin to learn how to implement these features—we'll be adding them to the program. And these ideas are only a starting point, so go nuts! Make the program totally your own—that's the fun of building apps.

Learning More about REALbasic

If you really want to get into REALbasic, you'll need more information than anyone can stuff into a magazine article. Here are some good sources:

- *The REALbasic Language Reference* and *The REALbasic Developer's Guide*. We wish everyone wrote manuals this well. Both books are available from Real Software.
- *REALbasic: The Definitive Guide*, by Matt Neuburg (O'Reilly & Associates, www.oreilly.com).
- Check out a great source of links to online tutorials at www.realbasic.com/support.html.
- Get news and updates for the REALbasic community at www.swssoftware.com/realnews.

Application 2: Cocoa Word Processor

If you're a bit more familiar with programming (say, if you've done some simple C-language programming in the past), and if you're experimenting with Apple's Mac OS X Public Beta, you might enjoy learning Apple's Cocoa framework. Cocoa's extremely powerful and flexible tools come at the best price imaginable—if you go to www.apple.com/developer and sign up for a free online

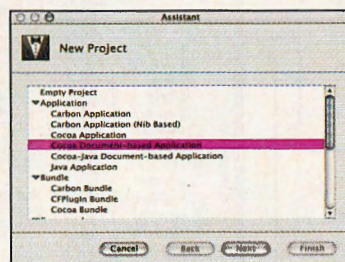
membership, you can just download Cocoa directly from Apple. You can program Cocoa in either of two languages: Java or Objective C. At the moment, Apple recommends Objective C—Java apps tend toward sluggishness. Fortunately, Objective C isn't too hard to learn. Let's use Cocoa and Objective C to build a simple word processor.

ProjectBuilder

Apple bases its development tools on two applications: ProjectBuilder and InterfaceBuilder. ProjectBuilder is a fairly traditional Integrated Development Environment; it combines a text editor, graphical debugger interface, and project-management tools into a single application. InterfaceBuilder is basically ResEdit on steroids; it lets you lay out your application's user interface and even specify the relationships that compose your app.

To get started, double-click ProjectBuilder. If you've never run it before, you'll have to answer a few questions about how you'd prefer it to behave (you can specify where you want compiled files to appear and ask that source code to appear in separate windows instead of in a pane of ProjectBuilder's main window). Next, choose a type of application from ProjectBuilder's rather imposing list. For a Cocoa application, you have just two choices: a Cocoa app or a Document-based Cocoa app. In the former case, the program has a single window (like Disc Copy); in the latter, it opens documents, each in its own window (like Word). We're making a Document-based application, so choose that option from the list. You should now see your project window (see interface below). The panel on the left side shows the various files and bundles that make up your application,

while the bigger panel on the right lets you edit the selected file. The groups provide links to the files composing your program.



A Cocoa word processor is a Document-based Cocoa app that presents users with independent documents.

To start, click the disclosure triangle next to Resources. You'll see four files: Credits.rtf, the credits page for the program; MainMenu.nib, which stores the menu bar; MyDocument.nib, which contains the layout of a single document window, and InfoPlist.strings, which stores the current version of the program for the automatically generated About box. To lay out the Document window's interface, double-click MyDocument.nib. InterfaceBuilder will launch, showing you the default document window.

Classes

These are the new classes you've created for your application (see "What the Heck is Objective C?", p33).

Other Sources

As you'd guess from the name, these consist of the other source files that go into your application—typically, the main function, main().

Resources

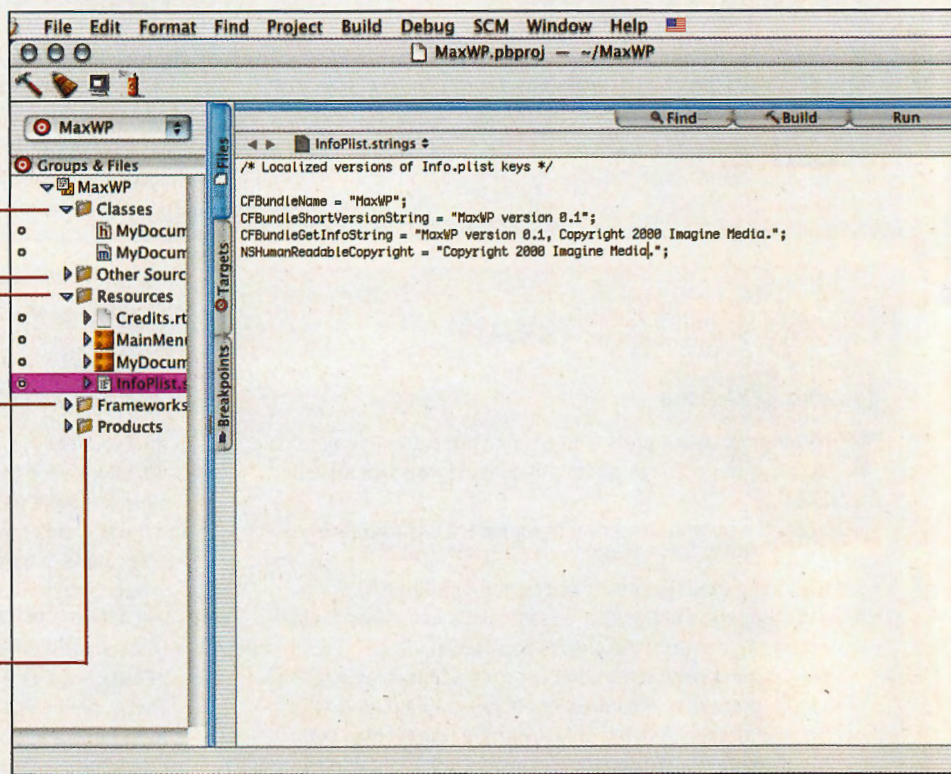
These files describe your application, its interface, and its current version number.

Frameworks

These are the header files that tell the compiler how Cocoa's interfaces work.

Products

This is the program you're building.



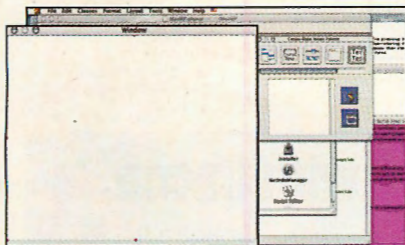
InterfaceBuilder

The InterfaceBuilder interface shows you three windows. At the upper left you see a generic-looking window with an uninformative "Window" title bar. At the upper right appears a palette full of the interface elements—buttons, scroll bars, and so on—that make up your interface. Near the bottom is a palette listing the objects described by the .nib file.

To turn the document into a word processor, first click the Your Document Contents text, then press Delete. Now click the text box image in the Views palette to display the various text boxes provided by Cocoa. A large text box appears on the left side of the palette; drag this onto the document window, and resize the box so it fills most of the window.

Save the changes you've made and go back to ProjectBuilder. Choose Build And Run from the Build menu to see how much of an app you've already created. You'll quickly see why people like Cocoa—your new word processor supports cut, copy, paste, spelling checks, and some simple font styles, all without requiring you to write a single line of code!

To go much further, though, you'll need a working knowledge of Objective C. Once you know Objective C, you can finish the word processor—tell it how to save files, add a status line, and so forth (see the sidebar "What the Heck is Objective C?", below). Because of this programming language's complexity, we'll take you on an in-depth tour of Objective C on www.macaddict.com/magazine/plugin. For the moment, we'll push our new application as far as we can without delving into code.



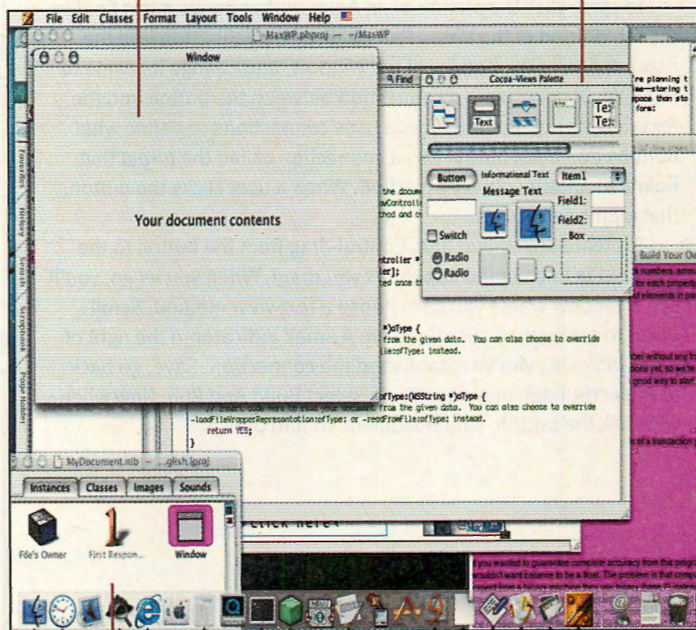
You're now much closer than you think to having a fully functional word processor.

Program Window

The window you're actually building.

Views Palette

Provides the elements you'll add to the program window.



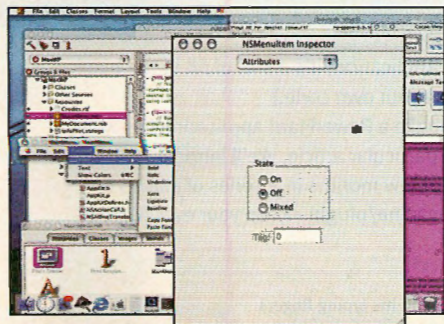
Objects Palette

Lists the objects contained in the .nib file.

Activating the Font Panel

At the moment, our word processor is missing some major features. One of the most obvious is that the Font Panel appears grayed out! That's very easy to fix.

In ProjectBuilder, double-click MainMenu.nib—your application's menu bar should open in InterfaceBuilder. In the representation of the menu bar, click Format, then Font, then Font Panel. Choose Inspector from the Tools menu to bring forward the Inspector, which lets you adjust the properties of the selected interface element. Change State from Mixed to Off. Once you save your changes, return to ProjectBuilder and choose Build And Run again—now you can use the Font Panel to change fonts in your word processor.



By changing State to Off, you tell Cocoa to always allow the Font Panel to appear.

What the Heck is Objective C?

Objective C is a somewhat obscure language that once offered serious competition to C++ in the race to extend C support to object-oriented programming, way back in the 1980s. NeXT adopted the Objective C language as the basis for its application interface. For the most part, it's the same as the straight C you may have learned back in college. The key difference is that Objective C allows a new construct: a *class*. If you're familiar with the standard C record type, think of a class as a record type with various functions attached—some to the class itself, others to individual instances of the class. This structure lets classes hide their data, making it easier for one person to change how a class works internally without breaking code that depends upon it.

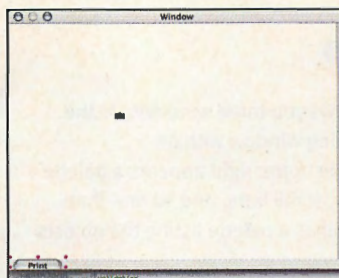
If you're used to C++, Objective C will seem familiar and bizarre by turns. All the familiar players are there—classes, class and instance methods, and so on—but they interact in unusual ways. Objective C does not support multiple inheritance, and it's dynamically typed, so the program only works out types at runtime. That has many advantages—you don't have to worry about the usual blizzard of virtual functions when you're creating base classes, for example, since method calls (messages in Objective C parlance) are resolved at runtime.

Printing

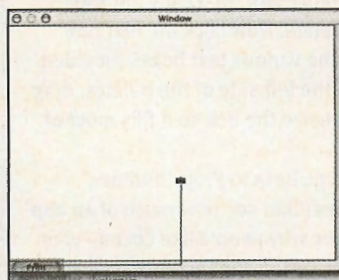
The Print command in the File menu doesn't work right now, and making it work will require some actual coding in Objective C. Instead, we'll add a Print button to the program. Doing so will demonstrate another cool property of Cocoa: connections.

To start, click the picture of an Aqua button above a text field in the top portion of the Views Palette. Drag a pushbutton into the blank region at the bottom of the window, and change its name to Print. You'll now create a connection between the button and the text view's print method. Cocoa uses connections to define what buttons do—each button has a connection called the *target* that points to another object's method. When a user clicks the button, that method executes.

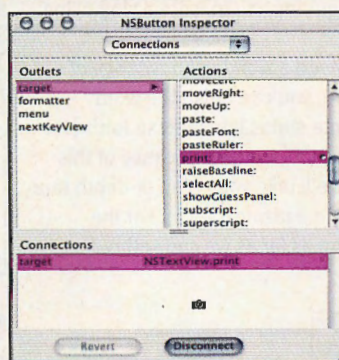
To create the connection, Control-drag from the button to the text field (a line should appear as you drag). When you let go, you'll see a window where you can choose a text view method. Scroll down to print:, then click Connect. A small indicator to the right of print: indicates you've established the connection. Save, go back to ProjectBuilder, and once again select Build And Run. Now when you click the button, your document should print.



Drag the button to the bottom of the window from the Views Palette to create it.



Control-dragging in Interface Builder lets you establish a connection from one interface element to another.



Once you've established the connection, clicking the button causes the text view to print.

Learning More about Cocoa

To find out more about building your own apps, check out the following resources.

- Apple's Web site (www.apple.com/developer). Click Documentation to get to Apple's latest OS X developer documentation. Unfortunately, a disturbing number of pages on Apple's site currently tell you only that they're "coming soon," while the rapid changes in Cocoa have left other pages out of date.
- *Rhapsody Developer's Guide* by Jesse Feiler (Morgan Kaufmann Publishers, www.mkp.com). The title gives a hint as to the age of the book. Despite the book's somewhat dated nature and somewhat overwhelming enthusiasm for its subject, it's the best overview of Cocoa in print.
- The www.stepwise.com site includes news and information for Cocoa developers.

Going Further with Cocoa

We've obviously left quite a few stones unturned in this survey of Cocoa. Here's a quick list of other tricks you should probably teach your word processor to make it a serious Word competitor.

- Saving and opening files. Apple provides somewhat confusing information about doing this in its `NSDocument` class.
- Implementing a status bar. We intentionally left a space at the bottom of the window for this purpose.

Again, you can learn how to code these features into your app by visiting www.macaddict.com/magazine/plugin.

A Brief Look At PowerPlant

If you're an experienced C++ programmer, you're probably looking for a way to avoid all the tedious work involved in using the somewhat antiquated Macintosh Toolbox. Fortunately, Metrowerks has created a solid C++ framework, PowerPlant, that you can use to build fully functional C++ Macintosh applications in a fraction of the time it would otherwise take (a framework is a body of code that

provides the basis for an application; it's a sort of fill-in-the-blank form, in which you can use your own code.)

Teaching you how to make a PowerPlant application lies well beyond the scope of this particular article. We'll introduce PowerPlant programming over the next few months in a series of articles on www.macaddict.com/magazine/plugin—keep your eyes peeled!

Ian Sammis can't believe how big this feature turned out to be—his eyes were bigger than his typing fingers.



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The Dirty Dozen

12 Features of the Mac OS That Must Die (and How to Kill Them)

by David "Capone" Reynolds *illustration by Peter Ferguson*



Find It!
1.1.2
BetterCalc 3.8
PCalc 2.1
TopCalculette
2.0v5, iCount
1.2, CalcIT 1.1,
and InformIT
8.1 on The Disc

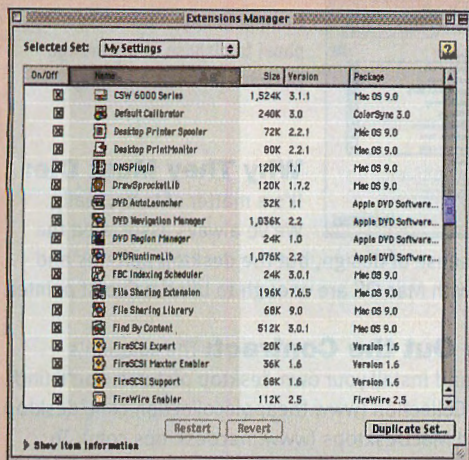
There's nothing more embarrassing than receiving the kiss of death in front of all your friends, especially when you've just sat down to enjoy a nice meal in a dark, out-of-the-way restaurant. Giving the kiss of death, of course, is a whole different experience. It's satisfying, on some sublime level, knowing that someone who has done you wrong will soon be gone.

And that's how it is with our much-beloved Mac OS. While the operating systems experience as a

whole is nothing short of spectacular, certain parts of it aren't, shall we say, true to the family. We've identified 12 of these culprits, and we've put them on our Dirty Dozen list—parts of the Mac OS that must die for the good of the platform. Where there are solutions, we'll show you how to carry out the hit—whether that involves some tweaking of your current Mac OS installation, installing the right shareware, or even going so far as to hand off the contract to the ultimate wise guy, Mac OS X.

Marked for Death

System Extensions



Every one of these bits of software represents a potential crash. Use as few Extensions as possible—they're powerful, dangerous magic.

Why They Must Die: System Extensions are probably the single biggest cause of crashes in Mac OS 9.x and earlier. Extensions are pieces of software that exchange their own code for bits of the system software's code—for example, Kaleidoscope replaces parts of the Mac OS's window-drawing routine with its own flashier routines. This system creates a lot of problems, though—say two Extensions try to replace the same bit of the Mac OS, or some program won't work unless that bit of the Mac OS remains unchanged. The result is a tire-screaming crash, complete with broken glass.

How To Carry Out the Contract: Apple's been trying to get rid of Extensions for years without success. But that doesn't mean you can't do something about the madness Extensions cause. Here are three ways.

- Use only the Extensions you need. Because any Extension is the programming equivalent of a ticking time bomb of terror, the fewer you use, the less likely a life-ending system crash becomes. Enable only *required* Extensions (and yes, that includes Apple Extensions). To figure out which Extensions you absolutely need, check out InformINIT (\$15, <http://mco4.equinox.net/informinit>), which has information about almost every Extension out there.

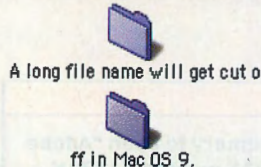
- Keep your Extensions current. Extension updates often fix bugs and reduce crashes. Of course, this rule of thumb doesn't necessarily apply to a whole new version (such as going from 2.51 to 3.0), which may introduce new bugs. To find the most recent version of an Extension, visit the developer's Web site or check out Version Tracker (www.versiontracker.com).

- When trouble strikes, suspect Extensions first. A quick test to see if an Extensions conflict is causing your headaches is to start up with only basic Extensions enabled. If your problem goes away, then an Extensions conflict is most likely your problem.

Will Mac OS X Do the Dirty Work? Mac OS X takes aim at Extensions with a high-power sniper rifle and completes the contract. OS X eliminates Extensions completely, except in the Classic layer—but there's not much you can do about that. At any rate, the Classic Extensions don't threaten the whole system.

Marked for Death

31-character file names



But in Mac OS X, you can type for a long, long, long time without hitting a file name length limit. In fact, it's kind of ridiculous how

Mac OS X does the job Mac OS 9 could not—namely, allowing more than 31 characters in a file name.

Why They Must Die: Back when the best file name a PC could muster was 8 characters long (plus a 3-character file extension), our 31-character file names were tops. Now, next to Windows' long file names (253 characters), ours look pretty puny.

How to Carry Out the Contract: Although the HFS+ volume format that Mac OS uses to format disks supports long file names, Mac OS 9 and older versions can't utilize that ability. This means files to which you assign long names in Mac OS X, then look at through Mac OS 9, will remain at full length even though you'll only see 31 characters of the name in Mac OS 9. Unfortunately, there's no easy way to make the current Mac OS do what it simply can't.

Will Mac OS X Do the Dirty Work? With pleasure! Mac OS X uses long file names, so you can wax poetic when naming a folder.

Marked for Death

The Calculator



Am I a clown? Do I amuse you? Probably not, because I haven't changed in 15 years.

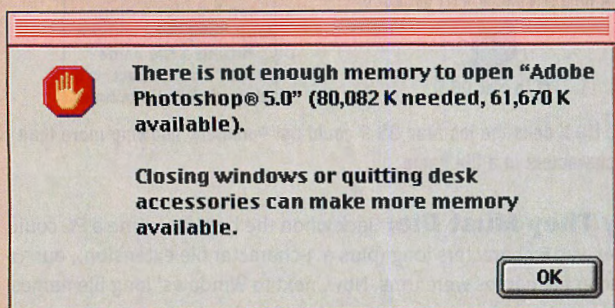
Why It Must Die: C'mon—the Calculator has remained essentially unchanged for how many years? It doesn't have any memory functions, it lacks a clear-error key, and it still retains the look and feel of the Mac OS circa 1984.

How to Carry Out the Contract: You'll find a ton of replacements out there, including iMalc, BetterCalc 3, PCalc 2.1, TopCalculette, iCount, and CalcIT (find some of these on The Disc, or search for them at Version Tracker). Each of these shareware programs costs \$15 or less and provides a lot of bang for the buck, including tapes, trig functions, memory, and programmability. To replace the Calculator, pull it out of the Apple Menu Items folder and put one of these items in its place.

Will Mac OS X Do the Dirty Work? Mac OS X wimps out when it comes to pulling off this job, as its Calculator isn't much improved over Mac OS 9's. At least it looks better.

Marked for Death

Manual memory allocation



If you're seeing this dialog box a lot, it's time to add RAM—or upgrade to Mac OS X when it comes out.

Why It Must Die: Mac OS was never meant to run more than one application at a time, so it has always had a hard time divvying up available memory for more than one program. Apple engineers grafted on a way to allocate memory to multiple apps, but the result is a hack at best. When launched, programs request a chunk of memory to call their own, but you have to set the size of that chunk via the Get Info window before launching the program. Unfortunately, this process keeps your Mac from using memory as efficiently as possible.

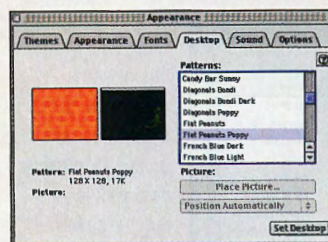
How to Carry Out the Contract: Short of rewriting Mac OS (which Apple engineers are already doing, thank you very much), there's no way to kill manual memory allocation in Mac OS 9 and earlier. There are, however, ways to minimize its effects.

- Buy more RAM. This allows you to set memory partitions for your existing programs to their proper levels so you can run several apps and have plenty of RAM left over for the system software.
- Fine-tune your memory allocations. Go through all of your applications and give them just enough memory to work well (and prevent system errors), but no more. That way, you can set and forget. To set a program's memory partition, select its icon in the Finder and choose Get Info from the File menu. You can adjust the memory partition size there. Start off by giving your apps a few thousand kilobytes more memory each (or approximately 110 percent of the preferred value).
- Turn on Virtual Memory. For PowerPC-based Macs, this decreases the amount of RAM your programs require because it enables the Mac OS to use RAM more efficiently. To turn on Virtual Memory, open the Memory control panel and click the On button in the Virtual Memory section. If you're editing audio or video, you'll probably want to leave Virtual Memory off and buy *lots* more RAM. Video and audio work is notoriously intolerant of Virtual Memory.

Will Mac OS X Do the Dirty Work? Partially. Mac OS X has a thoroughly modern way of managing memory—invisible to the user, it makes changing memory partitions in the Get Info window a thing of the past. Except for Classic applications, that is—you'll still need to set their memory partitions manually.

Marked for Death

Bad desktop patterns



Head to the Appearance control panel to dispose of the orange Rorschach test of a desktop.

Why They Must Die:

It's a matter of taste, really.

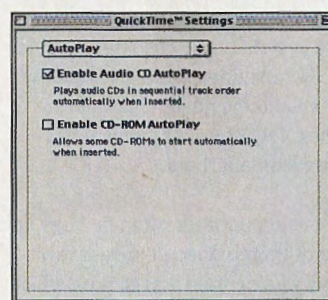
We've always associated the Mac OS with a fine sense of design, but the desktop patterns and pictures that come with Mac OS are enough to blind a Cubist painter.

How to Carry Out the Contract: The solution's simple—download and install your own desktop pictures. You'll find a slew at the Apple Collection (www.theapplecollection.com/desktop/dtlinks.shtml) and MacDesktops (www.macdesktops.com). To install a new desktop picture, pop open the Appearance control panel and click the Desktop tab. Click the Place Picture button to locate a new desktop picture. If you want your desktop to switch between several different images on startup, drop a folder full of pictures on the left box of the Desktop window.

Will Mac OS X Do the Dirty Work? Not as far as we can tell. Mac OS X Public Beta ships with exactly one desktop picture, and while it's not obnoxious, it's up to the Mac OS X user to seek out and install better ones.

Marked for Death

QuickTime AutoPlay



Uncheck the Enable CD-ROM AutoPlay box to protect yourself from AutoStart worms.

Why It Must Die:

Virus writers can exploit the QuickTime AutoPlay mechanism, which launches programs on specially prepared

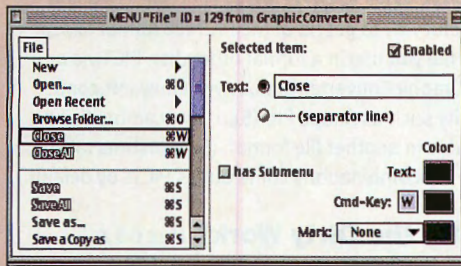
CDs. QuickTime AutoPlay has the ability to launch a multimedia CD's main interface as soon as you drop the disc in your drive. Very few developers take advantage of this autorun function—yet it's on by default, leaving your Mac vulnerable to AutoStart worms. These viruses, although uncommon, can do everything from corrupting files to damaging image files.

How to Carry Out the Contract: Open the QuickTime Settings control panel, select AutoPlay from the pop-up menu, and uncheck the Enable CD-ROM AutoPlay box.

Will Mac OS X Do the Dirty Work? Probably—Mac OS X Public Beta has AutoPlay turned off by default.

Marked for Death

Fixed key combos



Only for the truly rugged of heart, ResEdit can achieve the dream of every Mac customization aficionado: total control of most applications' key commands.

Why They Must Die: The Mac OS is the most customizable operating system out there, but one feature stands out: locked-in Command-key combos. Wouldn't it be great if you could change the key combinations of any program (including the Finder) to suit your personal needs?

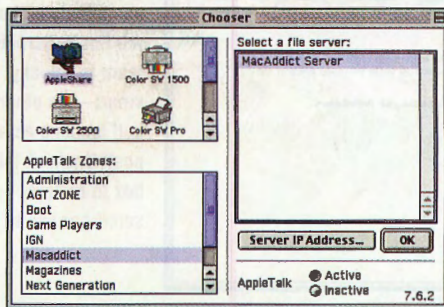
How to Carry Out the Contract: While there's no surefire way to change all key combinations across the board, those who are fairly handy with ResEdit (you can download ResEdit via <ftp://ftp.apple.com>) can muck about in the Menu resources to change some of these commands. Remember—always do this sort of hacking on a copy of the application, never on the original file. Messing around using ResEdit can result in dire consequences, so you want to have the option to undo your work.

In ResEdit, open a copy of either the Finder or the application you want to alter. Locate its Menu resources, and open the individual menu for which you want to change the command key. (For more details, see "Hack Your Mac," Jan/97, p38, and "Hack Your Mac 2000," Apr/00, p24.) Unfortunately, if the application's engineers chose to implement key combinations without using Menu resources, you're out of luck.

Will Mac OS X Do the Dirty Work? Nope. Worse still, Apple has changed a couple of key combinations (such as the one for creating a new folder in the Finder), so the familiar old shortcuts may not work—and currently OS X offers no easy way to change them back.

Marked for Death

The Chooser



Apple has extended the Chooser far beyond its natural abilities. It's time to put it out of its misery and replace it with the Network Browser.

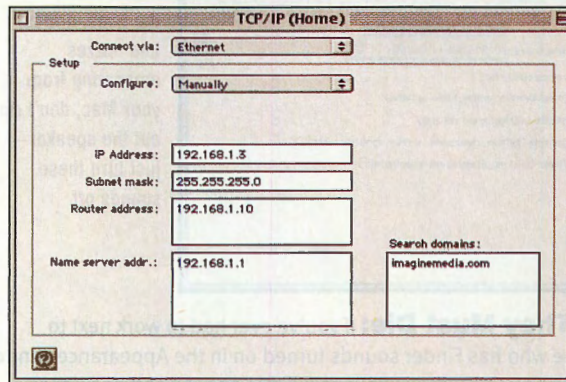
Why It Must Die: The Chooser is a holdover from 1984, when its sole purpose was to choose your printer and a port for that printer. At some point fairly early on, Apple engineers thought it would be a good idea to stick AppleShare services into the Chooser. The result was a confusing mishmash of protocols in an area not really designed to handle them.

How to Carry Out the Contract: Fortunately, the folks at Apple have been working on this problem, and the fruit of their labor is the Network Browser, first introduced with Mac OS 8.5 in 1998. The Network Browser (located in your Apple Extras folder) lets you cruise through your network for various services, including AppleShare servers and LDAP servers (a way of looking up someone's name from an email address). To subtract the Chooser from your day-to-day server needs, put an alias to the Network Browser in your Apple menu and use that instead of the Chooser. You can also make aliases to the AppleShare servers you frequent—double-clicking such an alias will connect you to that server and circumvent the Chooser.

Will Mac OS X Do the Dirty Work? Yes. Mac OS X has no Chooser. Instead, it places the printer selection process into a program called Print Center, and the server access process into a Connect To Server menu item under the Go menu.

Marked for Death

Network streams



Although streams in Open Transport disappear underneath the TCP/IP control panel, they can make Mac network programming a nightmare.

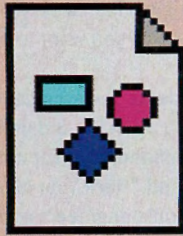
Why They Must Die: Mac OS uses streams to initiate network connections—most notably TCP/IP. This poses a few problems: One, the technology has a bad reputation among networking geeks. Two, streams make obscure network programming (such as creating software-based IP routing) very easy, while they make basic functions (such as opening a plain-vanilla network connection) very difficult. Three, sockets—not streams—are the standard in the rest of the computing world.

How to Carry Out the Contract: Unfortunately, this one will go unfulfilled until Mac OS X comes out. Open Transport, the home of streams, is an entrenched part of the Mac OS, so that's that. Of course, if you want to use your Mac without networking at all, that's your business.

Will Mac OS X Do the Dirty Work? OS X uses sockets to establish its network connections, which should cheer up network administrators and programmers looking to write basic networking code.

Marked for Death

PICT graphics format



Most commonly found as a screenshot file format, PICT files are slated to go the way of the dodo bird.

Why It Must Die: PICT graphics are also a holdover from 1984, when Apple needed a file format to handle picture files. PICT files are essentially a bunch of QuickDraw commands that can handle both

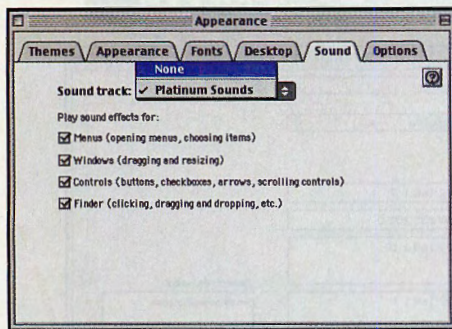
bitmap and vector images. Unfortunately, doing anything with a PICT file is exceedingly difficult from a programmer's point of view. Besides that, no one outside the Mac community knows what a PICT file even is.

How to Carry Out the Contract: With Mac OS 9 and earlier, there's no graceful way to get rid of the PICT file format except to save every graphics file you use in a format other than PICT via a graphics app such as GraphicConverter (\$30, www.lemkesoft.com). You can also use a utility such as Snapz Pro (\$40, www.ambrosiasw.com) to take screenshots in another file format. (Screenshots taken with standard Mac OS key combinations come out as PICTs by default.)

Will Mac OS X Do the Dirty Work? Mac OS X uses standard graphics file formats such as TIFF and JPEG to do its graphics work—no need to rely on a confusing and little-known standard.

Marked for Death

Finder sound sets



If you want to kill the pops, grinds, and buzzes emanating from your Mac, don't rip out the speaker—just turn these sounds off.

Why They Must Die: If you've ever had to work next to someone who has Finder sounds turned on in the Appearance control panel, you'll know why we have to kill this one. All of those pops, clicks, and buzzes make a Mac sound as if it has eaten a questionable burrito—and they really squeeze your last nerve after a while. (Not that we're angry about it.)

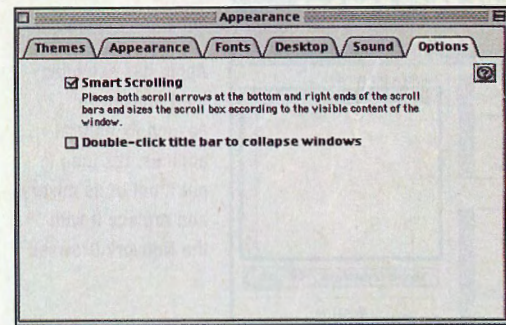
How to Carry Out the Contract: If you just can't stand all of the noise coming from your Mac (or your coworker's Mac, for that matter), give it the digital equivalent of Maalox—turn off the Finder sounds. Open the Appearance control panel, click the Sound tab, and select None from the Sound Track pop-up menu. To *really* ensure that these sounds stay buried, open the Sound Sets folder (which lives in the Appearance folder inside the System Folder) and throw away the Platinum Sounds file.

If things get a bit *too* quiet in the office, you can download a variety of sound sets from Mac OS Resources (www.macosr.com). Just drop these in the Sound Sets folder and select a new set in the Sounds window of the Appearance control panel.

Will Mac OS X Do the Dirty Work? Looks like it. So far, Mac OS X doesn't have any sort of soundtrack to go along with its Finder operations.

Marked for Death

Smart Scrolling



In spite of its name, only half of the Smart Scrolling team is actually smart—the other half is dumb as a post. Uncheck this box to restore scroll-bar sanity.

Why It Must Die: You have two options here. You can kill only one member of the Smart Scrolling team—that annoying NeXT-ism that puts both arrows together at the bottom of the scroll bar—or you can do away with the whole gang. The other half of the Smart Scrolling duo—consisting of proportional scroll thumbs that change size depending on how much of the window displays—is a nifty idea, so you might want to let it live. So why kill the poorly placed scroll arrows? Several reasons: For one, if you miss the intended arrow, you'll accidentally scroll in the wrong direction. Also, with both arrows located at one end of the scroll bar, you're potentially a mile away from the scroll boxes (say, if you're at the top of the window). Plus, having the scroll-up arrow at the bottom of the window is just daft.

How to Carry Out the Contract: To kill all of Smart Scrolling, open the Appearance control panel, click the Options tab, and uncheck the Smart Scrolling box. If you want to keep proportional scroll thumbs while scrubbing the bottom-dwelling arrows, use a utility such as Scroll Bars (free, <http://homepage.mac.com/TomDarz/software.html>).

Will Mac OS X Do the Dirty Work? Mac OS X restores sanity to the situation by returning one scroll arrow to each end of the scroll bar while retaining proportional scroll thumbs.

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Xtreme Mac



PHOTOGRAPH COURTESY OF TONY HAWK

Tony Hawk shares his top-secret tips for making killer action-sport videos

by Narasu Rebbapragada and Cathy Lu

Close your eyes and picture this: You're skateboarding at approximately 30 mph down a U-shaped ramp. When you reach the top, you fly off the ramp, and about 50 feet up in the air, you do a 360-degree somersault two and a half times before landing with the skateboard beneath your feet. That little trick is called the 900, and professional skateboarder Tony Hawk landed the first and only one in skateboarding history at ESPN's 1999 X Games—a tribute to just how difficult it is. If you consider that amazing feat, and the fact that he has finished number one in more than 50 competitions and invented more than 50 skateboarding tricks throughout his 18-year career, you'll understand why Hawk is considered today's premier icon of skateboarding.

But Hawk is perhaps best known for lending his big-air moves to the big-time games that bear his name. As of October, Tony Hawk's Pro Skater 2 and the original Tony Hawk's Pro Skater sat in the number one and three positions (respectively) for PlayStation sales on PC Data (a computer industry sales tracking firm) and together the games have already sold at least 4.5 million copies for all platforms. And Activision, the game's publisher, should rectify the

one big problem with the game—the lack of a Mac version—as the company is close to finding a Mac developer.

For that, we have Tony Hawk, Mac fanatic, to thank. An "Xtreme" Mac user for more than five years, Hawk originally started using Macs to launch his skateboarding company Birdhouse, which he co-founded in 1992. But there's an even bigger role that Macs play in Tony Hawk's life: video editing. A core part of skateboard culture, videos are the way that skate companies publicize their teams and products and a channel for individual skaters to show their stuff and troll for sponsors. That's where the Mac comes in: It's the ultimate video editing machine for the DIY skateboarder. So who better than Tony Hawk—skateboarding legend, super-Mac freak, and expert videographer—to hit up for tips on filming and editing high-octane videos?

Recently, we caught up with Hawk at his new house near San Diego, California, where his G4 was among the first items he unpacked. There he fired up Final Cut Pro, shared his shooting and editing secrets, and showed us how Macs, video, and skateboarding are more intertwined than you might think.

Capturing Air: Advice for High-Action Videos

Skateboarding—with its unconventional venues, lightning-fast movements, big air, and even bigger wipeouts—can prove both exciting and frustrating for beginning videographers. Here Tony Hawk shares his hints for making effective skate videos, but you can apply Hawk's tips on shooting and editing to any high-adrenaline sport.

Shooting Video

1. Establish a Point of Reference

When filming that death-defying trick, include a point of reference to prove exactly how high your subject is. Without it, the viewer will never know if the skater is 2 or 200 feet off the ground. Your point of reference can be the ground, a rail, or, as shown below, a deck—anything that provides some perspective.



In this shot, the deck in relation to the ground shows just how much air Tony Hawk got.

2. Anticipate the Direction of Movement

Think through where your subject's going. "Assess it and say, 'If he takes off, he's going to be running this way, and I need to pan in the same direction,'" Hawk says.

3. Light It Right

Set your camera's exposure on manual. "If you're shooting on automatic exposure, and you follow someone up in the air and it's brighter up there, the whole thing gets washed out," says Hawk. Conversely, if the background gets too dark, you'll end up with too much shadow. He recommends setting the manual exposure so the subject is properly lit in a darker setting. While this may wash out the background, you'll get better overall image quality.

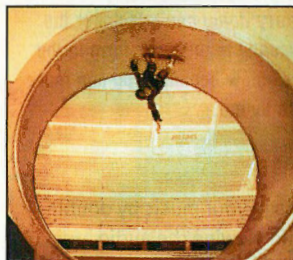


Here the autoexposure makes Hawk look too dark while it attempts to compensate for the bright background.

WATCH OUT If you try to play video clips straight from a FireWire drive, they will pause and skip on playback. These drives are fine for storing videos, says Hawk, but to play them directly from your drive, go the SCSI-2 route.

4. Mix It Up

In an ideal world, you would have some friends with extra DV cameras and lenses to capture a variety of angles. In the real world, however, you're probably on your own, so it's important to mix up shots to give your video energy. Here are several different types of shots.



Shooting from a Distance

"Shooting from afar in a stationary position [lets you] zoom out and see it all," Hawk says.



Zooming In

"When someone's doing a really intricate move, you're not going to see that when you're wide...you want to zoom in closer," Hawk says.



Fisheye Shots

A fisheye lens can give you cool distortion that exaggerates how big the trick is.

TIP On a close-up, Hawk suggests setting it up with an establishing shot—for instance, when someone's skating a set of stairs, pan up the stairs and then go in close on the skater so "you've seen him close up, but you also have seen the magnitude of what he's doing."

Tony Hawk: Mac Guy

Tony Hawk isn't what you would call a fair-weather Mac fan. He was using Macs long before they came in stylish 8-inch cubes and pretty translucent colors. In fact, Hawk's first computer was an Amiga, on which he ran a Mac emulator. After this setup became too cumbersome, Hawk acquired his first Mac—a Quadra—in 1994. (He's fuzzy on the exact model number—a testament to Apple's brilliant naming schemes.)

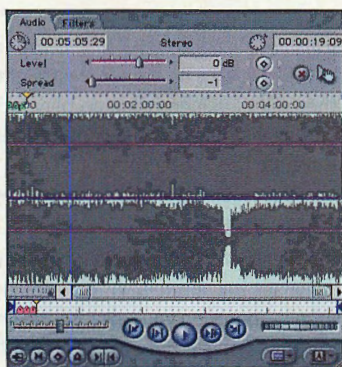
These days, Hawk uses a PowerBook G3 (Wall Street edition), and his home setup includes a brand-new baby Cube and a 400MHz G4, which he uses for most of his personal video work. The G4 is hooked up to a FireWire drive, a CD writer, a DV deck (for mastering video), and a 22-inch Cinema Display.

Editing Tips

1. Add a Soundtrack

When choosing music, Hawk evaluates both how good it sounds and what kind of mood it creates. Once he's chosen it, he converts audio CD tracks to AIFF files using Astarte CD Copy (www.astarte.de) or uses Casady & Greene's SoundJam (www.soundjam.com) to convert MP3 files to AIFF. From there, it's easy to import your music to Final Cut Pro. Either drag it from the desktop onto the timeline or use the Import command under the File menu.

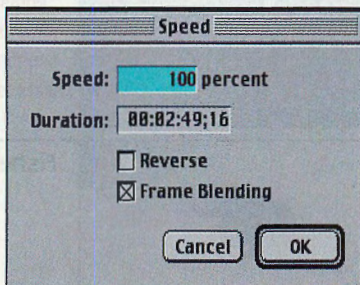
Edit the flow of your video to the beats in your music by double-clicking your audio clip in the timeline and viewing the audio waveforms in the Viewer window. Find the beats (by sight or sound), and tap the M key to set markers. These markers appear in the timeline, where you can match them up to your video clips.



Don't worry if you can't decipher the beats visually in this waveform in the Viewer window because you can mark the beats by ear.

2. Use Slow Motion to Show Off Spectacular Action

If action's happening so fast that the viewer can't see what's going on, slow it down. In the Timeline, select the clip in question. Choose Speed from the Modify Menu. In the dialog box, you can either type in an exact duration for the clip or enter a percentage of the original speed. To create really detailed slow motion, Hawk slows video to about 30 percent of its original speed. If the detail is less important, he slows it to 50 percent.



For a glimpse of life in the slow lane, adjust the settings in this dialog box.

3. Use Stills

Hawk uses stills, edited in Photoshop, to aid in explaining certain skills. For instance, when the subject reaches the peak of a movement, Hawk might use a still with circles and arrows to illustrate the technique, then import it into Final Cut Pro as a TIFF, PICT, or JPEG file.

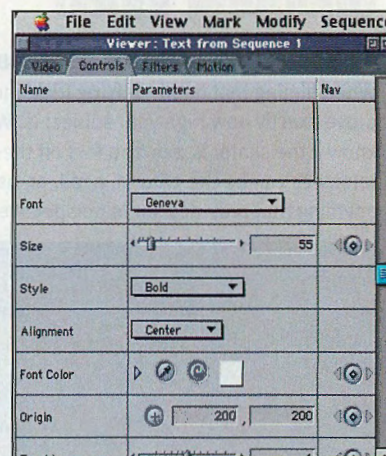
4. Keep Transitions and Titles Simple

Hawk sticks to cross-fades for transitions. "With skating, everything's so quick that if you're sitting there dealing with fancy transitions, you're going to miss all the action." To add a transition, open the Video Transitions folder within the Browser window. Choose the Dissolve folder and drag a transition to the timeline. Place titles in a clear space in the frame, not over someone's face or over the action. To create a title, double-click the Text button in the Video Generators folder in the Browser window. You can modify a title's look using the Controls tab in the Viewer window.

Use the Controls tab in the Viewer window to format and move your title text.



Keep title text out of action's way using the Canvas window.



Narasu Rebbapragada and Cathy Lu like to think of themselves as Xtreme—they're just not sure in what way.

Tony Hawk: Pro Gamer

For more than a year, we Mac users have had to grit our collective teeth as we've watched Tony Hawk's Pro Skater 1 and 2 come out for just about every platform except the Mac. But finally, Hawk tells us that Activision is planning to port Pro Skater 2 to Mac (as of press time, the developer was not yet announced). In the meantime, Hawk keeps himself busy playing Pro Skater 2 on his G3 PowerBook via Connectix's Virtual Game Station, a PlayStation emulator.

As for Hawk's involvement in the development of his eponymous games (he's already working on Pro Skater 3), he plays them through every stage and consults on the real skaters, parks, and tricks that provide the basis for each game. He also acts as a model for motion capture although, admits Hawk, the physics aren't always completely true to life. For instance, some of the combos or, say, the sequence where a skateboarder grinds along an electrified rail in the New York subway may be *slightly* exaggerated.

Coming attractions: Hopefully you can expect a Mac version of Tony Hawk Pro Skater 2 at a store near you shortly.



The Compression Game

Hawk exports most of his video to tape using standard NTSC-DV compression, but when creating video for the Web, he relies on the following tools and settings.

Application: Media Cleaner

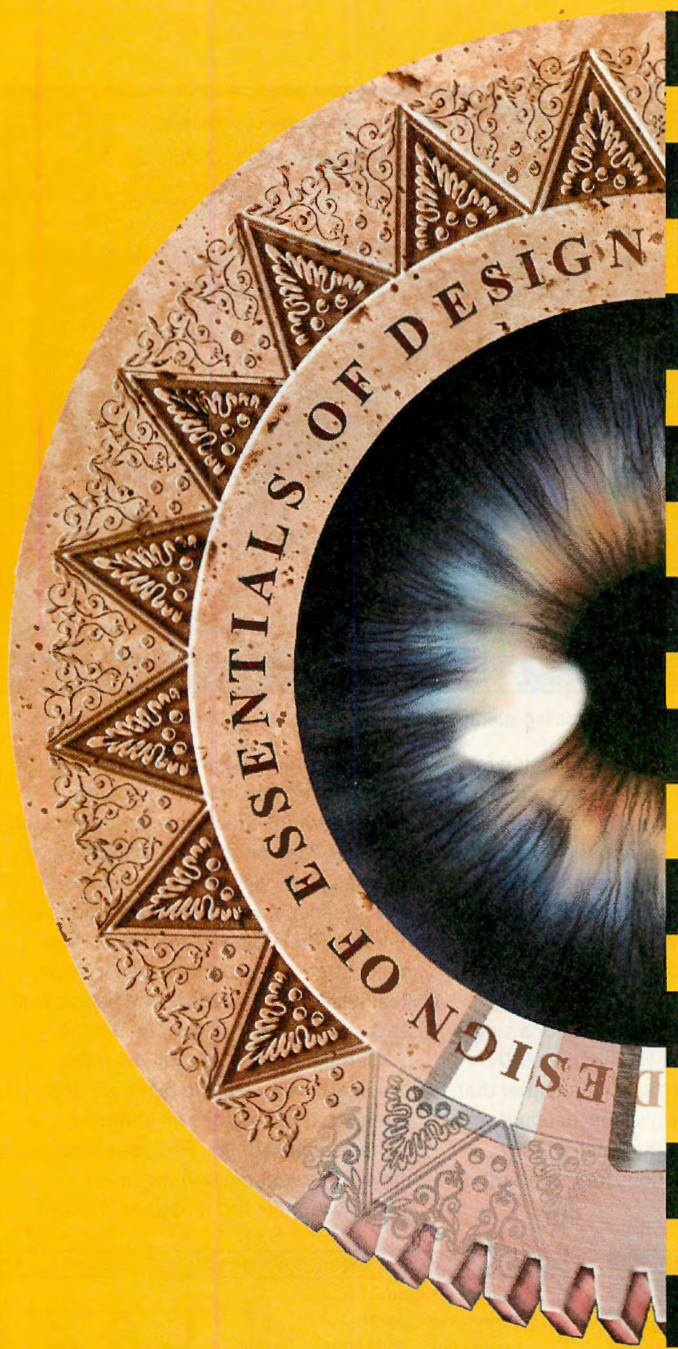
Codec: Sorenson

Frames per second: 15

Image size: 240 by 180

Data rate: 20 to 30 Kbps for video with a lot of motion (anything less will look blocky)

Illustration never looked so good.



Eye-catching
illustration, isn't it?

And yes, despite the glistening
highlights, the realistic textures, the
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reviews

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Cleaner 5

multimedia

Company: Media 100

Contact: 800-577-3443 or 508-460-1600,

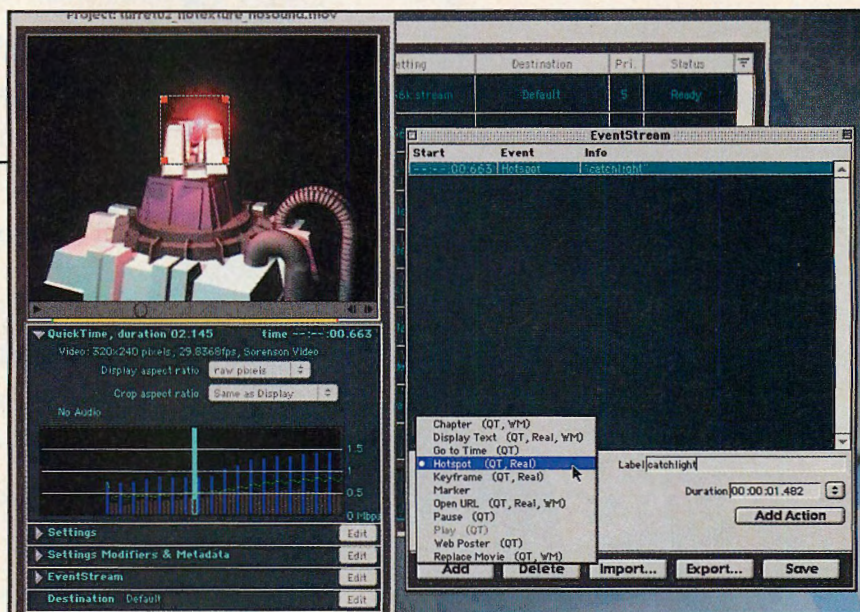
www.media100.com

Price: \$599 (SRP), \$179 (upgrade)

Requirements: Mac OS 8.6.1 or later; QuickTime 4 or later; 64MB of RAM; 10MB of free hard disk space; CD-ROM or DVD; 800 by 600, 16-bit display; DV camera or deck for DV video capture

If there's a single must-have application for anyone working with professional video and audio on a Macintosh, it's Terran Interactive's Media Cleaner Pro. The company, now a subsidiary of Media 100, is the leader in video and audio compression tools. Its flagship product has adopted a new and simpler name, Cleaner, and the latest version covers greater ground, with DV capture, improved batch processing, and output to interactive streaming media. Cleaner 5 lives up to its promise to be "the camera-to-Web streaming solution." It's the perfect tool for both video professionals and Web content creators.

The first step in Web-based video authoring is importing video into the computer. In the past, you needed programs like Apple's iMovie or Final Cut Pro to bring digital video into the Mac. The Cleaner 5 package now includes Digital



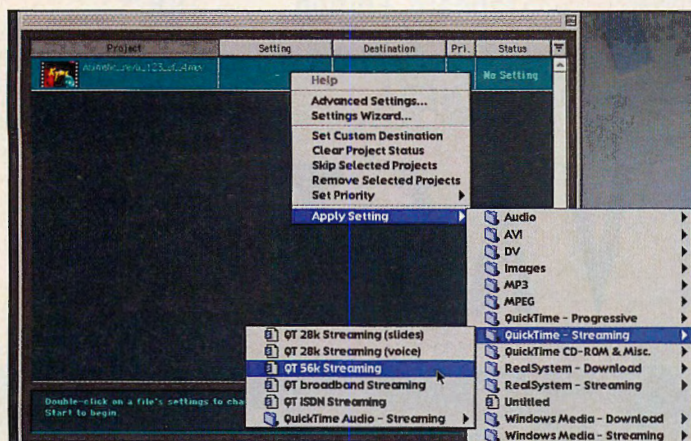
A simple and effective tool for creating interactive streaming content is built right into Cleaner 5.

Origin's MotoDV, a simple application for capturing DV from FireWire-compatible DV cameras. Installing MotoDV was a simple plug-and-play process, and the application worked seamlessly with Cleaner 5. We simply connected our Sony DCR-TRV900 to the Mac with a FireWire cable and launched MotoDV, and we were ready for video capture.

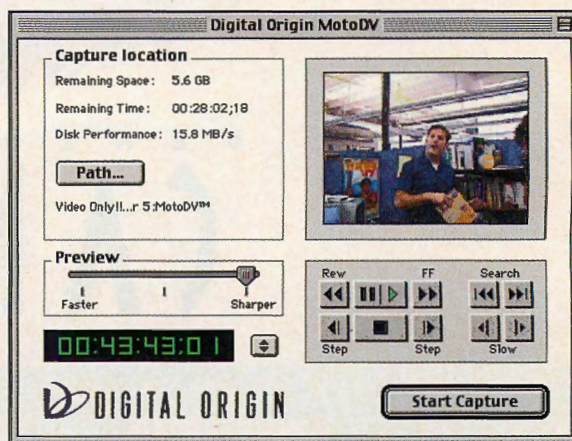
To capture video, you just click a single button. The first time we did it, MotoDV asked us to give the file a name. After that, Cleaner 5 automatically launched and placed that clip into the batch window, ready to take instructions for compression and output.

What compression parameters you need depends on how you intend to distribute your video. Web content creators who use video on their sites want to give users as many viewing options as possible. With Cleaner 5, you can render a video in any size. The program handles all three major streaming standards—QuickTime, RealSystem, and Windows Media—as well as the MP3 format on the audio front.

Setting up the video for streaming couldn't be simpler. The batch window gives you three options for choosing compression settings. First, control-click the settings column to bring up an extensive preset list of options. You can



Settings, shmettings. Just use the contextual menu to find your compression choice, and you're off and running!



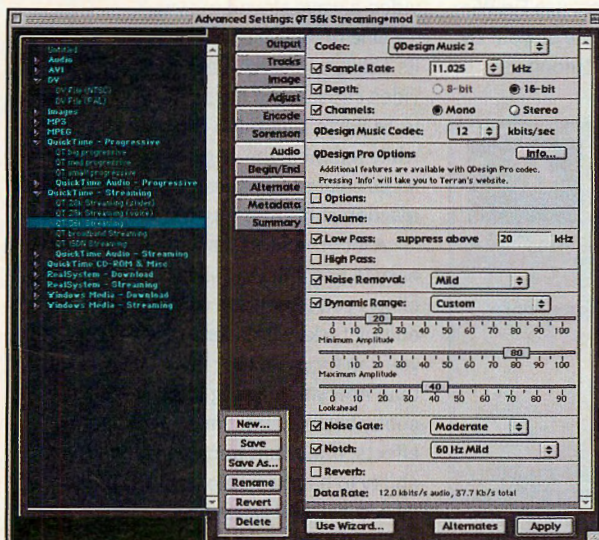
This simple interface is all you need to begin the camera-to-Web streaming process.

apply similar settings to one or more files by selecting multiple files and using the contextual menu. You can even tweak parameters for one or more of the presets. Second, the Settings Wizard, essentially an interview process, can create compression settings based on your answers. This gives you a little more control over your settings than the preset options do. Third, for nitpickers, you can go even deeper into compression parameters and tiddle with such settings as Deinterlace, Telecine, Black/White Restore, and other obscure items. Save your choices, and they will appear as a preset the next time you use the contextual menu.

The batch processor is one of the most important factors in video processing—it allows you to set all the parameters for your video files, then do other work while the

computer chugs away. Cleaner 5's ability to save files to remote servers makes it ideal for streaming files. You can set each file's destination to a local directory or to a remote streaming host server, so you don't need a separate FTP application to upload your files. And Cleaner's ability to process files to different streaming types allows you to save a full-size copy to a local hard drive, as well as save different sizes in streaming QuickTime, RealSystem, and Windows Media, if you dare, to a remote server. These almost endless options take Cleaner 5 to a higher level of productivity.

The ability to encode any format of streaming media is very cool, but Cleaner 5 goes one step further with its new EventStream authoring, giving you the ability to create *interactive* streaming content. Imagine watching a streaming QuickTime



For the user who wants it all, Cleaner comes with every settings parameter you'll ever need. Tweak to your delight.

video in your Web browser that shows, say, a person holding a product. Then you click that product in the QuickTime window, triggering the Web browser to open a pop-up window with the product's description and price. Now that's pretty snazzy. Other products do have this kind of authoring ability, but Cleaner 5 makes the process so easy, even a beginner can do it. Simply set the time, the event, and—if appropriate—a hot spot in the video for triggering the event. Other EventStream examples include synchronized HTML to movie, Chapters, Jumping to different parts of a movie by

clicking, etc. You can export this information to an XML-based file and tweak it in an XML editor—or for code-heads, any text editor.

Cleaner 5 isn't *just* about Web authoring. It's also a tool for CD and DVD authors. The program supports MPEG-1, a popular format for high-quality Internet and CD-ROM videos, and MPEG-2 compression—the DVD format. Cleaner also supports MP3 encoding of audio, with many optimization options.

Along with its host of new features, Cleaner 5 offers some notable background improvements. It processes files faster than previous versions. It includes dual-processor support for increased processing speed. It also produces higher-quality video using an improved adaptive noise-reduction filter, and better audio with an improved dynamic-range audio filter. The XML-based settings allow sharing of files between Mac and Windows platforms.

Along with this powerful tool comes a useful manual. The well-laid-out, easy-to-read contents offer in-depth information about video and formats. For instance, one chapter discusses tips on shooting video for faster streaming, another detailed section covers format architecture. Add to this a 22-page glossary and a comprehensive index, and you have a great package.

Overall, the extensive tools and new features in version 5 make this already killer product worthy of another *Freakin' Awesome!*—Andrew Tokuda

good news: Complete, full-featured tool.

Lives up to promise of camera-to-Web streaming solution. Easy EventStream authoring. Great manual. **bad news:** Can't yet clean your house, clothes, dog, or other miscellaneous items.



Get More Info

Media 100 has posted a truly useful set of tutorials and white papers on their Web sites to give you a taste of what's available. Check out www.terran.com/learn/index.html for the rest.

- **CodecCentral** (www.terran.com/CodecCentral/index.html) A site devoted to the myriad of multimedia architectures and codecs.
- **iCanStream.com** (<http://icanstream.com>) iCanStream.com instructs you on shooting, editing, encoding, and publishing DV.
- **Articles and resources** (www.terran.com/learn/articles.html) Here you'll find downloadable articles and white papers on producing high-quality Web video (including QuickTime) and interactive streaming.

in review

fun & games

BEACHHEAD 2000 P53
LINKS LS 2000 P58

hardware

SONY DCR-TRV520 P50
SAMSUNG ML 6060 P52
SONY SPRESSA EXTERNAL
12X8X32 CD-RW P53

80GB MAXTOR 1394 EXTERNAL
STORAGE P54
FORMAC PROTV P56
HANDSPRING VISOR PRISM
P60
ONSTREAM ECHO 30GB P63
TRAVAN FIREWIRE 30GB P63
OLYMPUS CAMEDIA C-2100
ULTRA ZOOM P64

kidz stuff

CLIFFORD THINKING
ADVENTURES P65
ARTHUR'S CAMPING
ADVENTURE P65
LEGO KINDERGARTEN MYSTYLE
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utilities

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P62
STUFFIT DELUXE 6.0 P62

iMovie 2

multimedia

Company: Apple

Contact: 800-795-1000 or 408-996-1010, www.apple.com

Price: \$49 (download)

Requirements: 300MHz Power Macintosh G3 or faster, Mac OS 9.0.4, 64MB of RAM (128MB recommended), 200MB of free hard disk space (4GB recommended), QuickTime 4.1.2 or later, FireWire 2.4 or later, 800 by 600 display with thousands of colors, built-in FireWire port

Don't lick your computer screen, no matter how tempting the new Aquaesque interface makes it.

A year ago, Apple launched the consumer desktop movie revolution with iMovie, giving Mac owners the power to transform ho-hum home movies into digital video masterpieces. Now iMovie 2 is here, and—just like a gel cap—it's chock full of good stuff in a slick, easy-to-swallow coating. With a refined interface, new video effects, and improved audio handling, this is one sequel that's actually better than the original.

The first thing we noticed when firing up iMovie 2 was the new Aqua-like interface; happily, the changes are more than skin deep. Playback controls are more logically organized, and editing tools now reside in familiar tabbed panels rather than awkward sliding drawers. The new Timeline viewer displays thumbnail images, which helped us quickly identify clips. And we appreciated the ability to zoom in on the Timeline for precise edits.

Getting DV into iMovie 2 is easier than ever. The scrolling Shelf now holds an unlimited number of clips, and you can still import DV streams created with QuickTime Pro. Basic editing tasks are easier as well. You can crop or split clips in the Shelf before adding them to the Timeline, and restore footage to cropped clips (as long

Increase the font size of titles so they're still readable even after you export them to a stamp-size QuickTime movie.

as you haven't emptied the project's Trash). If you want to edit like the pros, use FireWire Preview Mode to see your movie on your DV camcorder—or an attached TV monitor—while you work.

Version 2 has plenty of goodies for enhancing your movies. Video effects such as Sepia Tone, Black And White, and Water Ripple give footage a brand-new look. The color, brightness, and contrast controls improve image quality. You can play clips backward or adjust their speed, making it possible to zip through Junior's xylophone recital or watch that watermelon explode in glorious slow-mo. In addition, iMovie 2 offers more options for creating transitions, and you can finally adjust the font size of titles to make them more legible.

If we had a bone to pick with the original iMovie, it was that it handled audio far less nimbly than it did video. Movies, however, rely on sound as well as sight—a fact Apple seems to have remembered with iMovie 2. With this rev, we could split audio clips, and the new Ghost Playhead Marker helped us position audio clips precisely in the Timeline. Even better, we locked audio clips to a specific

piece of video, assuring that audio and video always stayed in sync.

One of iMovie 2's standout features is its ability to extract the audio track from video clips. Along the same lines, it allowed us to paste one video clip on top of another while retaining the original clip's audio. This let us create sophisticated cutaways and reaction shots in a single step.

A lot of vendors claim their software is easy to use; iMovie 2 is easy *and* fun. It allows you to perform complex video-editing tasks with nearly magical ease, so you can focus on the result you want rather than how you're going to get it. With a subtly tweaked interface, more options for effects, titles, and transitions, and the ability to handle audio as deftly as video, iMovie 2 is well worth its modest price tag and helps ensure that desktop video is here to stay. —Mark Anthony

good news: Sleek, Aquaesque interface. Cool new video effects. Better control over titles and transitions. Improved audio-editing tools. Can export to QuickTime streaming format. **bad news:** Has hefty system requirements. Can't import wide-aspect video. Applying effects and exporting movies can be time consuming.

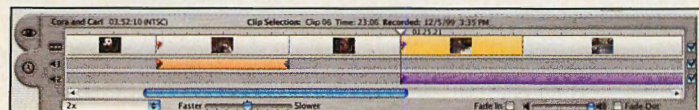
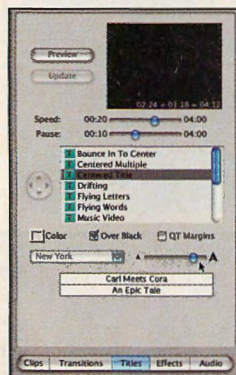


Get iMovie 2 Freebies

Head over to www.apple.com/imovie to get the free iMovie 2 Plug-in Pack, which adds ten new effects, transitions, and title styles to this version. While you're at the site, download some free sound effects, music loops, and backgrounds for use in your movies.



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Sony DCR-TRV520



PHOTOGRAPH BY AARON LAUER

hardware

Company: Sony

Contact: 800-352-7669, www.sony.com

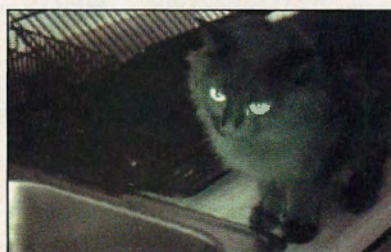
Price: \$1,099 (SRP)

Requirements: Macintosh with built-in FireWire port

Sony offers a rendition of just about every electronic gadget on the market today, and video cameras are no exception. The company is a leader when it comes to bringing home video to the consumer, as evidenced by the multitude of Sony models in electronics stores. So what makes the DCR-TRV520 stand apart?

This Digital8 camcorder, Sony's latest offering in its Handycam line, gives users of old 8mm and Hi8 video something to crow about—connectivity via FireWire (cable not included), which allows you to capture and edit your footage on any FireWire-enabled Mac. This feature works great with iMovie, Final Cut Pro, and Adobe Premiere. The camera also sports AV, S-Video, and i.Link connections.

With Digital8 or Hi8 tape, you can record high-quality video and get CD-quality sound, thanks to the device's 16-bit PCM recorder. The viewfinder is black and white, but you'll most likely use the 3 1/2-inch color LCD swivel screen. The camera offered great recording quality, though sometimes rather soft-focused, and had no problem transitioning exposures between shadows and bright light. In low light, it retained good exposure, though we saw some expected loss in color and some digital noise.



The NightShot feature lets you discreetly tape what goes on in pitch darkness—like naughty pets venturing where they're not supposed to go.

Although the TRV520 is packed with features, some of them cater only to PC users.

Enabling the camera's NightShot feature in total darkness made us feel quite catlike as we slunk through the night with complete—albeit green-tinged—visibility. The rich sound quality offers a full spectrum of frequencies, as opposed to our old 8mm's tinny audio. The built-in microphone is a bit on the sensitive side.

The camcorder doubles as a digital camera, allowing you to capture photos on the included 4MB Memory Stick (640 by 480 resolution) or on tape. Unfortunately, unless you have a Memory Stick adapter for your Mac, you can't download your photos directly to it (the camera comes with just a PC serial cable). The shots we took on tape came out decently. Sony also includes PictureGear, a nifty piece of software for viewing your digital images...on a PC!

In terms of features, this baby's packed. The effects—seven fader, six digital, and eight picture—are some of the best we've seen. You'll find all of the usual standbys (sepia, black and white, mosaic, and so forth), but the chroma-key, old-movie, and luminance effects really impressed us—and sparked some pretty experimental footage. You also get image stabilization, 25X optical and 450X digital zoom, seven auto exposure modes, overdub capability, and titling—with all this, you can pretty much edit video sans any editing software.

We recommend this camcorder, especially for those who have archives of 8mm or Hi8 tapes they want to upgrade to digital. However, the Sony DCR-TRV520's lack of total Mac support means we can't give it the full ten-finger salute.—Kris Fong

good news: Superb light sensitivity. Cool effects. FireWire support. **bad news:** Digital photo transfer not Mac-friendly. Software supports Windows only.



Eudora 5.0

productivity

Company: Qualcomm

Contact: 800-238-3672 or 858-587-1121, www.qualcomm.com

Price: \$49.95 (SRP)

Requirements: PowerPC, Mac OS 8.1 or later, 2MB of RAM, 7.9MB of free hard disk space, CD-ROM

Apparently our peak email usage was at 6:00 p.m. PST. Why we care, we're not sure.

We've all met Eudora. A solid and full-featured email program, it works flawlessly with nearly every email standard in cyberspace. So now that Qualcomm has released Eudora 5.0, the real question becomes whether we should upgrade to version 5.0 or switch from another email client. Cult Eudora users will upgrade regardless of what we say, but others may not find the new features compelling enough.

Installation was no sweat on our iMac DV. Upgrading from Eudora 4.2 was a seconds-long process, as you might guess. And now, you can easily import email from Microsoft Outlook Express 5.x. Still, whether you'll want to upgrade is another question.

The reason? Eudora 5.0 sports only one major new feature: Eudora Sharing Protocol (ESP). ESP lets multiple Eudora 5 users share documents (MP3s, digital pictures, word documents, and other file formats you can attach to an email) without a server. Eudora creates a folder on each user's hard drive.

We Can't All Have ESP

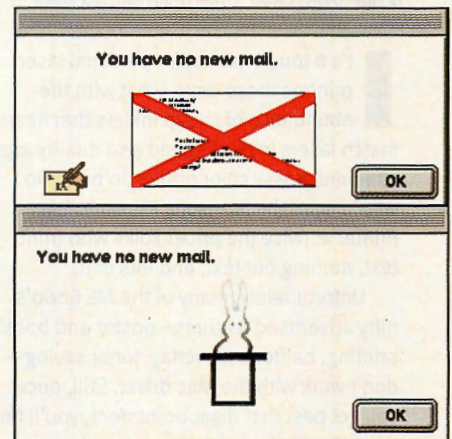
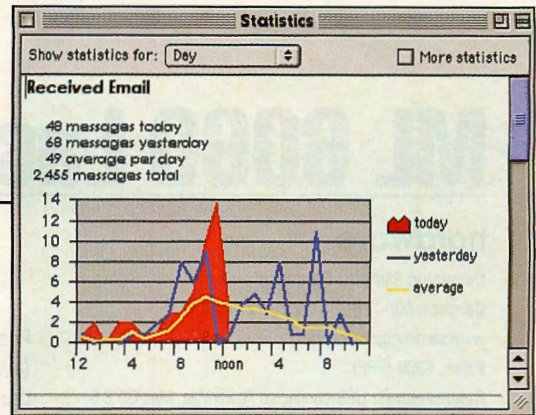
Eudora Sharing Protocol (ESP) is a pretty cool feature for an email program. Start your group with the ESP Groups command in the Special menu. The New ESP Share Group Wizard quickly walks you through the process of inviting your friends to join. You can add files to your shared folder via the ESP Groups window, and update your group members' folders with the Update Others button on the Eudora mailbox. ESP works wonderfully with minimal fuss—unless your friends and family don't all use Eudora 5.0. We sent invitations to people using Eudora 4.1, Microsoft Entourage, and Microsoft Outlook Express. While they received the invitation to join our group, they did not receive any of the files in our shared folder. Close, but no cigar.

Users can then add documents to this folder for others to share. Eudora automatically syncs all users folders with the most updated contents. We liked ESP for syncing files between our work and home computers, and it's an efficient way to manage shared documents among small groups, whether you're sharing pictures with family or MP3s with friends—that is, unless all your group members don't use Eudora 5. (See "We can't all have ESP," below, for more.)

Eudora 5.0 does offer other minor improvements. This version has opted for muted, charcoal-sketched icons with a barnyard theme. Black and white pigs announce that you have new mail and a melancholy bunny tells you if your box is empty. Cute icons aside, however, the clunky interface is largely the same. Opening multiple mailboxes still requires you to wade through a sea of windows. Another new feature, Moodwatch, rates high on amusement but low on usefulness. It monitors incoming and outgoing email messages for aggressive language and then rates the email with zero to three chili peppers (three being the most offensive). It's not hard to offend Moodwatch. Our email saying, "You suck!" earned us three chili peppers and a threat to wash our mouth out with soap. Yes, you can turn this off.

Also new and improved: a Statistics window that shows your peak email usage time for the day, week, month, and year. Qualcomm has updated Eudora's Address Book in version 5.0. You can store personal, home, work, and other contact information within Eudora. There's also a new notes field; the improved Address Book is handy, but it won't replace your personal information manager by any means. Eudora has made some improvements to its already strong Filter and Search features. One

We can't tell you what we said, because Moodwatch made us wash our Mac's mouth out with soap.

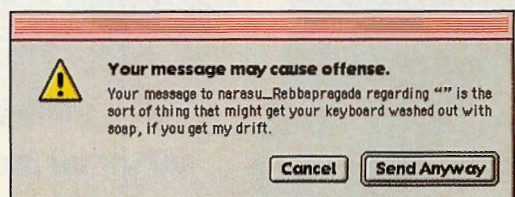


Compared to Eudora 4.x's no mail icon (top) Eudora 5.0's icon (bottom) is a kinder, gentler way to say, "Ha, ha, you have no friends, you loser."

feature noticeably missing is the Eudora Internet Suite for Palm OS handhelds. Windows users have the luxury of sending and receiving email via the Palm handheld. We, however, do not.

So yes, Eudora is still a solid email program, but it faces a lot of really good competition. When many people have free, easy access to Microsoft Outlook Express, it's hard to justify Eudora 5.0's cost. For current Eudora users looking to upgrade, bad news—there's no discounted upgrade price. ESP is a great new feature, but if you're not interested, wait till the next version. The other features, while cute, aren't worth the purchase price.—Narasu Rebbapragada

good news: Cute Icons. ESP is useful. **bad news:** Same old interface. No Palm support. Minor upgrade for most users.



ML 6060 Laser Printer

hardware

Company: Samsung Electronics

Contact: 800-726-7864 or 201-229-4000,

www.samsungprinter.com

Price: \$399 (SRP)

Requirements: USB-connected PowerMac, Mac OS 8.6 or later, 32MB of RAM, 1.1MB of free hard disk space

It's a tough market for personal laser printers these days, what with the abundance of cheap inkjets that nearly match lasers in print speed and quality and can print glossy color photos to boot. So who'd want the Samsung ML 6060 Laser Printer at twice the price? Folks who print text, nothing but text, and lots of it.

Unfortunately, many of the ML 6060's nifty advertised features—poster and booklet printing, halftones, overlay, toner saving—don't work with the Mac driver. Still, once you get past that disappointment, you'll find a lot of room for hardware expansion—a

The ML 6060 is a low-cost laser option for printing large amounts of black-and-white text.

PostScript SIMM and at least 8MB more RAM (available for \$199 from Samsung) will turn the 6060 into a full-on PostScript printer that you can use with Apple's LaserWriter 8 driver. Add an Ethernet network interface card (we found one at Buy.com for \$193), and you'll transform the ML-6060 into a full-fledged network printer.

For basic text printing, the ML 6060 rocks. Our sample text pages came out crisp and readable all the way down to two-point type (magnifying glass not included). The printer's meager 4MB of RAM makes long work of big, multifont jobs, but our plain-text, single-font test pages flew out to the tune of 12 ppm at a low-res setting (300 dpi), with background printing turned off. Under more typical conditions—600 dpi with background printing on—text comes out at around 4

ppm. (Samsung boasts that the printer can handle 1,200 dpi—but not with the Mac driver.) Simple graphics generally printed well, but the bundled RAM wasn't up to the more complicated pages we threw at it—the printer ran out of memory and refused to print the file.

Bottom line: If you're looking for a no-frills laser printer that can grow with your needs, the ML 6060 is a solid offering. If you're looking for a laser printer that's network- and PostScript-ready out of the box, consider the 6060's preupgraded sibling, the 6060NL.—*Niko Coucouvanis*

good news: Great text printing. Upgradable.

bad news: Many features missing for the Mac. USB cable not included.



spiffy



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Beachhead 2000

fun & games

Company: MacSoft

Contact: 800-229-2714 or 612-249-7600,

www.wizworks.com

Price: \$19.99 (SRP)

Requirements: 225MHz PowerPC or faster, Mac OS 8.1 or later, 32MB of RAM, 39MB of free hard disk space, CD-ROM

War is hell, kid, but it's nothing compared to the deadly dull damnation of controlling a fixed gun battery in *Beachhead 2000*, a simple-minded blast-'em-up. This game's deep-as-a-dime arcade-style gameplay lacks one important element: action.

A would-be turret operator, you're in charge of a powerful gun that blasts away enemies attempting to storm a rather generic beach. Killing all onscreen enemies clears a level, but each level is more or less the same. The game ends when your gun is destroyed,

In *Beachhead 2000*, fighter planes are no match for a fixed turret firing antiaircraft shells.

when the bullets run dry, or—more likely—when absolute boredom sends you into a comatose stupor.

Though you can't move the gun battery from its fixed position on the beach, you can swivel it 360 degrees and modify its vertical alignment using your mouse. Tapping the mouse sends a deadly stream of fire across the beach or into the skies. Players have access to four types of armaments: 30mm antiaircraft shells, 76mm antitank projectiles, .45 caliber bullets, and missiles. Each weapon has a different effect on flesh and armor. You'll need to master the art of tapping

the spacebar, which selects the weapon, to find the right killing tool for the job.

Sadly, playing war in *Beachhead* gets really old, really fast. The game offers only one blandly rendered environment, which will yield about ten minutes of mild amusement as you chop up soldiers on the sandy shores. After the fun's over, the best thing you can do is raise the white flag of surrender and let the enemy have its silly beach.—*Greg Orlando*

good news: Inexpensive. Great explosives. **bad news:** Monotonous.



blech!

Spressa External 12X8X32 CD-RW

hardware

Company: Sony Electronics

Contact: 800-352-7669, www.sony.com/spressa

Price: \$399.95 (SRP)

Requirements: Macintosh with built-in FireWire port, Mac OS 8.6 or later, Apple FireWire 2.1 or higher software

Sony's Spressa External 12X8X32 CD-RW is one of a growing number of FireWire-based drives. It's very close to a perfect purchase, apart from its weak CD-writing software.

Safety first: The Spressa's iLink (FireWire) technology allows you to hot-swap (unplug) the drive while the computer is on. Performance next: This drive is fast. At 12X write speed for CD-Rs, a 650MB CD takes as little as 5 minutes to burn.

You can duplicate CDs straight from a CD in the Mac's CD or DVD drive to the Spressa,

but you get better speed and reliability if you copy data onto the hard drive first, then burn it onto the CD-R in the Spressa. Our direct disc-to-disc duplication of an audio CD seemed a bit flaky at recording speeds higher than 4X. But after extracting the audio tracks to the hard drive first, 12X speed was no problem.

This great piece of hardware comes bundled with some not-so-great software. Sony's CD-burning software, Discribe, is a fancy-looking but unintuitive application. Clicking certain functions, such as the Disc Copy button, made the program quit unexpectedly. Continued frustration with



PHOTOGRAPH BY AARON LAUER

Bye-bye, beige. Hello neutral, inoffensive gray. The Spressa External 12X8X32 CD-RW makes great strides in performance, if not in color.

Discribe forced us to replace it with our trusty copy of Adaptec's Toast Deluxe 4.1.1. The Spressa also comes with Retrospect Express, a great program for backing up data, and Mixman Studio for weekend DJ wannabes. If Sony were to replace Discribe with an OEM version of Toast, this package would be freakin' awesome.

—*Andrew Tokuda*

good news: 12X speed is fast. Comes with extra software. **bad news:** Requires built-in FireWire. Mediocre CD-writing software.



spiffy

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Maxtor 1394 External Storage



PHOTOGRAPH BY AARON LAUER

hardware

Company: Maxtor

Contact: 408-432-1700, www.maxtor.com

Price: \$399 (street)

Requirements: Mac with FireWire port,
Mac OS 8.6 or later

Maxtor, a PC-centric hard drive manufacturer, has entered the Mac market with the ill-monikered Maxtor 1394 External Storage hard drive, an 80GB FireWire storage device. What the product lacks in a name, it more than makes up for in capacity, performance, and reliability.

The out-of-the-box experience may be a bit daunting for Mac users—after all, the drive is formatted as a DOS volume, and much of the marketing lingo on the box targets the PC market. Once you've had a chance to plug it in and install the drivers, however, you'll quickly discover that you can transform the 1394 External Storage drive into a sterling member of your hardware family.

The included software drivers don't feel like a PC port—instead, the software has a real Mac appearance, making it easy to format and set up your drive for use on your machine. The installer puts three FireWire programs on your hard drive: a utilities package for setting up and testing your new drive; a benchmark program to tell you how it performs; and a testing tool that checks the drive's connection. The interfaces of these programs are Mac-like and easy to use, but they also hold a lot of power. To give you a sense of just *how* much the

Maxtor makes its entry into the Mac market with this high-capacity, low-cost FireWire drive in a stackable ice-and-graphite case.

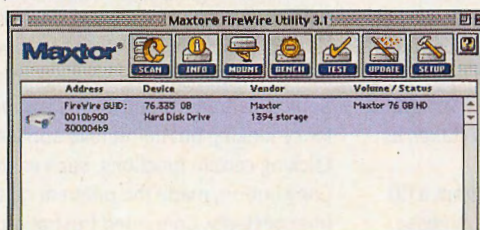
software folks thought about the Mac side of things, the software installation includes 30 3D icons to paste on your new volumes.

The drive itself performs well (if not spectacularly), with data transfer rates of around 5 to 10 MBps and a peak performance of about 20 MBps on sequential reads. That's on par with the performance of other FireWire hard drives, and although these rates don't push FireWire's theoretical limits, they *do* make backing up a multigigabyte drive relatively painless. During our testing, the 1394 External Storage drive didn't hiccup once. Like a good neighbor, it was always there.

Don't let the fact that the Maxtor 1394 External Storage drive appeared first on the PC platform throw you off. Under that thin veneer lies a solid, reliable, fast, high-capacity FireWire device. And its great Mac software looks and feels like it was designed by someone who has used a Mac before—and liked the experience.

—David Reynolds

good news: Solid, reliable performance. Real Mac drivers. Good case design. Big storage. Good price. **bad news:** PC leanings may be a bit distasteful to some. Product name blows.



The driver and utility software that ships with the Maxtor 1394 External Storage drive actually looks and feels like Mac software, and it's plenty useful, too. It covers formatting, mounting, testing, benchmarking, and a number of other technical—and probably useless—tidbits.

Norton SystemWorks 1.0

utilities

Company: Symantec

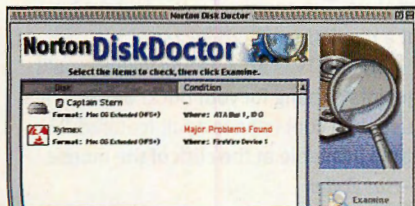
Contact: 800-441-7234 or 541-334-6054, www.symantec.com

Price: \$129.95 (SRP)

Requirements: PowerPC or faster, Mac OS 8.1 or later, 24MB of RAM, 20MB of free hard disk space, CD-ROM, Internet connection for LiveUpdate functionality

Same bat time, same bat interface. The superfriends of maintenance utilities have come together in a single box to offer Mac users one-stop shopping for disk repair, antivirus protection, file purging, and file backup.

Symantec's latest Mac product, Norton SystemWorks for Macintosh, is an über-bundle of essential utilities every Mac owner should have. The package includes Norton Utilities for Macintosh 6.0, Norton AntiVirus for Macintosh 7.0, LiveUpdate 1.6, Aladdin Systems' Spring Cleaning 3.5, and Dantz's Retrospect Express. While Utilities and AntiVirus are clearly the headliners, the whole set will keep Mac users' hard drives running without viruses, fully optimized, backed up, and free of broken aliases and bloated Internet cache folders.



DiskDoctor fights the good fight against disk trouble with new features and full support for FireWire drives.

If you've ever used either Norton Utilities or AntiVirus, you will feel at home the first time you fire up SystemWorks. You'll find old standbys such as Disk Doctor, Speed Disk, and FileSaver in their allotted slots. SystemWorks' main window also includes LiveUpdate, Norton's Internet updating software, as well as Norton AntiVirus.

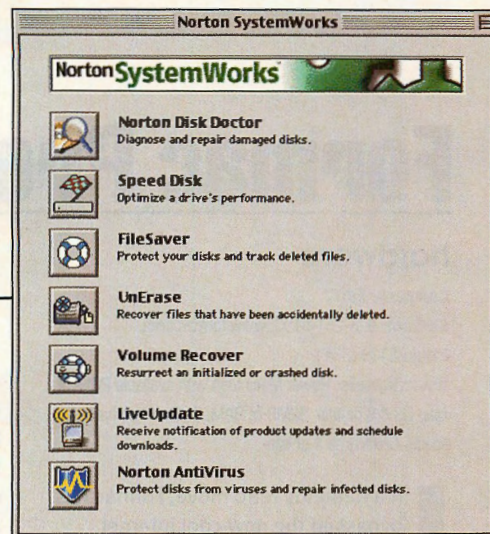
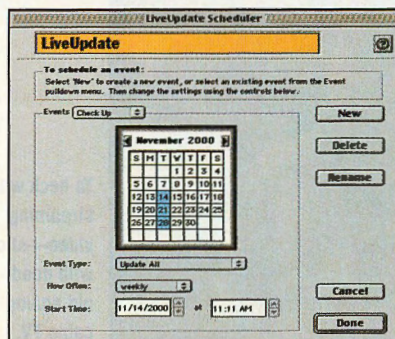
Early adopters of Mac OS X Public Beta will be happy to know that SystemWorks supports Apple's new OS. You can use SystemWorks' drive and virus utilities by booting up directly from the CD or from a Mac OS 9 partition.

Keep SystemWorks up to date by downloading the latest patches and virus definitions using LiveUpdate's on-demand or automated update functions.

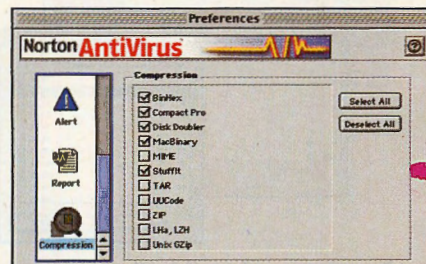
Power users also have a new way to optimize their drives, thanks to Speed Disk's new optimization profiles, which support games, video capture, or any other function that uses the hard drive intensively. For example, we use an external VST 8GB FireWire drive on our 450MHz G4 for both our archive and our working files. Before we optimized this heavily fragmented disk, it took almost 3 seconds to open the average Microsoft Word file. A General Use optimization cut that time to just over 2 seconds, and a Recently Used Files optimization almost instantly opened the majority of new files and took just over 2 seconds to open the archived work.

Most of the other SystemWorks tools resemble their version 5.0 counterparts, but you get a few new goodies. For your maintenance needs, Disk Doctor will let you force-rebuild your desktop by deleting the current one. You can now rebuild directories from Volume Recover and repair, optimize, recover, and wipe free space on volumes from a Norton contextual menu.

Although there aren't a lot of Macintosh viruses, they are out there—and Symantec has done a good job of making AntiVirus the definitive inoculation. Not only will AntiVirus work on your OS X partition, but it will also



scan email attachments for viruses and repair these files for you. Also new to version 7.0 is a contextual menu for scanning or repairing a virus, and the ability to scan compressed files. One small but very convenient change allows you to install new virus definitions without restarting your Mac. As a preventative, a new AutoProtect feature can repair infected files as they open.



AntiVirus won't let harmful pests hide in your compressed files now that it can scan all your archived BinHex or Zip files.

No Mac owner should be without a good disk-maintenance tool and virus protection. SystemWorks offers an excellent combination of solid tools at a very competitive price. Norton AntiVirus and Utilities alone are worth the price of admission, but adding Dantz's Retrospect Express (for backing up your files) and Aladdin Systems' Spring Cleaning (to trim the fat and cleanse the detritus from your drives) rounds out this one-stop box for your utility needs. If you don't have protection, buy it. If you already have a copy of Norton Utilities 5 and AntiVirus 6, you can probably skip this upgrade unless you are running OS X Beta. —Rick Sanchez

good news: Lots of bang for the buck. Checks email for viruses. **bad news:** Minor feature improvements.



Formac ProTV

hardware

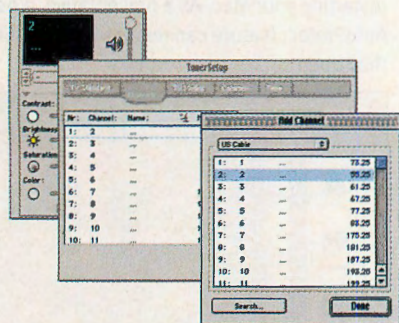
Company: ProTV

Contact: 925-251-0100, www.formac.com

Price: \$139 (SRP)

Requirements: Power Macintosh with available PCI slot, Mac OS 8.6 or later, 32MB of RAM, 3MB of free hard disk space, QuickTime 4 or later

In a defiantly retro move, Formac has bypassed the now-cool Internet streaming technologies and gone completely old-school with its ProTV TV tuner, FM tuner, and video-capture device for the Mac. The device works spectacularly well and—for a relatively inexpensive price—turns your Mac into a TV/VCR for the new millennium.



The software works well, but the initial setup is still confusing.

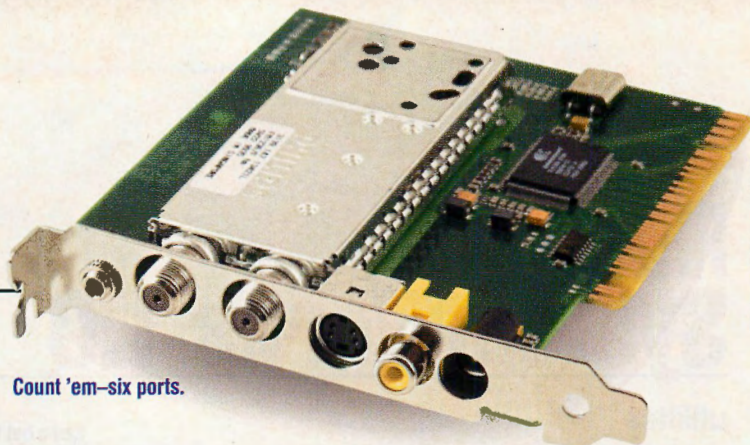
Installation of the ProTV is painless—just slide it into an available PCI slot. (Remember, iMacs, Cubes, PowerBooks, and iBooks don't have PCI slots, so you can't use the ProTV with them). The ProTV has undergone some changes since we last reviewed it (*Reviews*, Mar/00, p57)—the biggest is that it now includes an FM-stereo radio tuner. While installation of the

actual card is easy, the array of plugs on the card might keep sending you back to the printed manual. Still, once we'd sorted out which antenna plug to use for radio and which for TV, we got the ProTV up and running in no time.

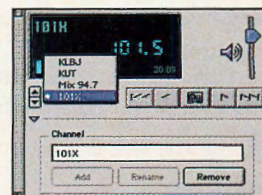
Once you've set up the ProTV, you'll discover where its real power lies—in the software that controls it. The ProTV lets you easily create and manage a list of preferred channels, which you can then access through a control strip module. The updated ProTV software is *much* better than the previous version, but still has bugs. Fortunately, trashing the ProTV preferences file and reconfiguring gets things back to normal. The ProTV allows TV viewing at a maximum resolution of 640 by 480, so at any but the lowest resolutions you'll be watching your TV in a window, not in full-screen mode.

The new FM-stereo radio tuner may seem like an absurd addition (radios aren't terribly expensive or cutting-edge, after all), but it will put those speakers you bought for your Mac to good use. While you can record from the radio, you'll need another piece of software such as Casady and Greene's Soundjam (www.soundjam.com) to turn captured songs into MP3 files. The radio portion of the ProTV software is apparently still in its infancy—you can't access the stations from the control strip module, and the software requires manual tuning. Nonetheless, the tuner is an impressive plus.

Count 'em—six ports.



PHOTOGRAPH BY AARON LAUER



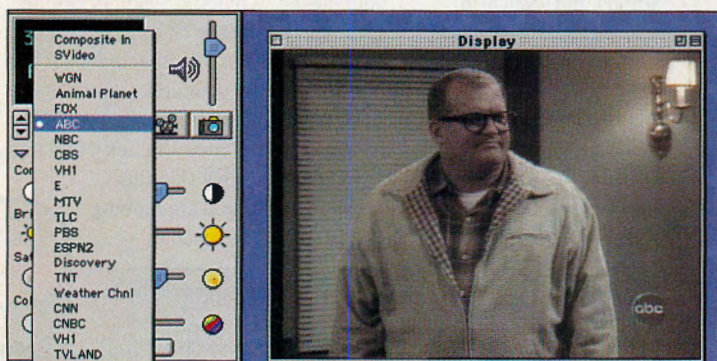
MP3 is trendy, but radio is still hanging in there. The ProTV lets you listen while you work.

The ProTV also functions as a video capture card. You can use your analog video camera or VCR to send signals to the ProTV for capture and editing with the included Adobe Premiere 5.1 LE. The driver software also makes the ProTV available to just about any video capture or Webcam software package, except for iMovie. The ProTV uses QuickTime 4 extensively, allowing for lots of compression options. Capturing video via the ProTV works well for Webcam use or QuickTime movies, but don't expect full-screen 30-fps video capture. The capture function works best at a resolution of 320 by 240.

The ProTV is an amazing value—you'll get lots of bang for your buck. Besides, it's just plain cool to have a full-featured TV or radio available at the click of the mouse.

—Buz Zoller

good news: Tremendous value. Supports 16 by 9 (wide screen, DVD) video. An inexpensive video-in solution. Includes Adobe Premiere LE 5.1. **bad news:** Cumbersome and buggy software. Confusing number of plugs on the card. Takes up a valuable PCI slot.



To heck with streaming video—stick with good old analog cable TV.

Through the Card

One of the biggest drawbacks of earlier ProTV versions was their poor handling of TV audio. Previously, you had to either connect an internal cable and patch it into the CD-ROM's audio bus, or run an external wire into the microphone input jack. Luckily, this version has fixed all that with a truly plug-and-play solution—the card itself now handles TV audio.

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Links LS 2000

fun & games

Company: MacSoft

Contact: 800-229-2714 or 612-249-7600,

www.wizworks.com/macsoft

Price: \$49.95 (SRP)

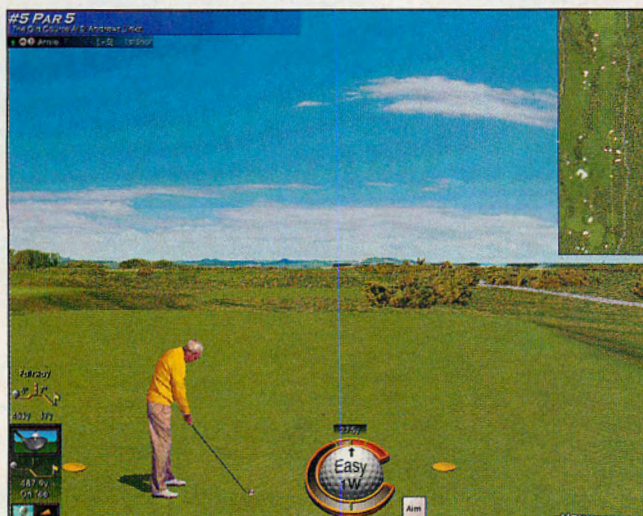
Requirements: 120MHz PowerPC or faster, Mac OS 8.5 or later, 128MB physical RAM (or 64MB physical RAM with virtual memory), network connection for online play



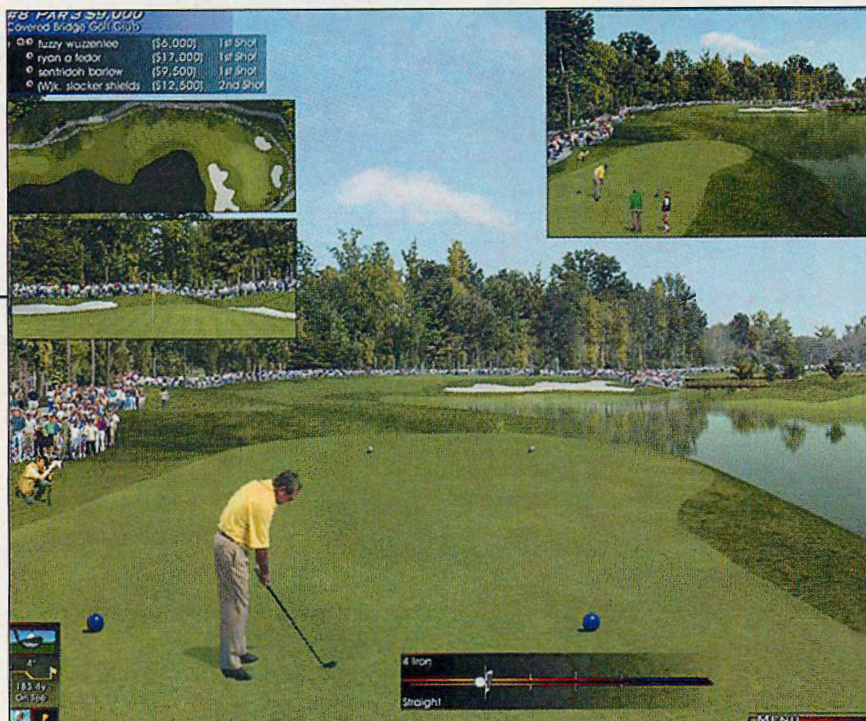
Find Links LS 2000 demo on The Disc.

Not only did the Scots invent radar, television, tamac, and penicillin, but they also invented the game of golf. Alternately called the ruination of a good walk and a giant waste of real estate, the latter invention is nevertheless one of the most relaxing and least taxing "sports" around. Links golf is perhaps the most Scottish kind of golf, given that the very word *links* is Scots for "relatively flat or undulating sandy turf-covered ground usually along a seashore." This is exactly the type of terrain you can expect in Links LS 2000.

2000 is an update of Access's classic Links series and consists largely of new courses and an updated interface—if you're looking for a dramatic graphical improvement, then look elsewhere. Saint Andrews, the Royal and Ancient, golf course of legend and lore, is most prominent here.



Sadly, Links courses, while challenging, tend to be on the flat and dreary side...



The detailed onscreen menus show just about every facet of the game in progress, including useful plan views of the course.

Also included are two Hawaiian courses and the somewhat less exotic Covered Bridge in Indiana—all fine venues, of course.

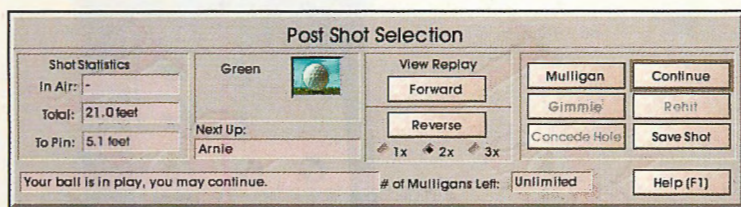
The game's strongest point is its intuitive and screen-friendly interface. The things you need, such as aim, stance, and club selection, only display when you need them, thanks to a cute rollover feature. This means the crisp representations of the golf courses and your chosen golfer fill most of the screen. Everything shown onscreen is digitized, so the graphics have a richly detailed but somewhat flat photo-realistic appearance.

The game eschews the current trend of texture-mapped 3D real-time polygons for a simpler rendering system that calculates your position on the course and, almost as an afterthought, maps the graphics. Unfortunately, a byproduct of this system is that the draw times, even on a fast computer, are less than impressive. The upside is that Links 2000 will run on older, non-G3 computers.

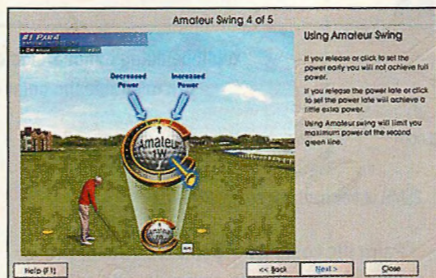
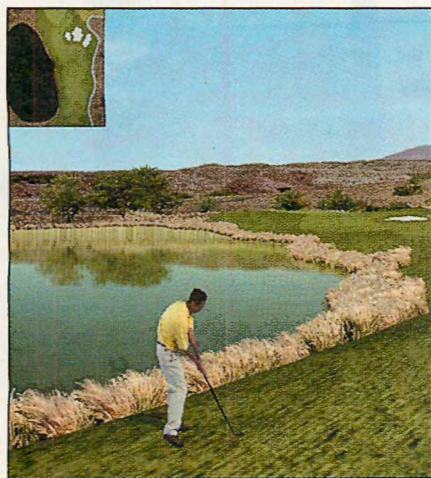
Like any modern golf game, Links 2000 is packed with features and options—including adjustable weather, a built-in golf coach to improve your skills, and—



...unless they're in Hawaii, that is, in which case they're tropical and wonderful.



The elegant and detailed Post Shot Selection window shows everything from pin distance to remaining mulligans.



Don't select the lowest difficulty level if you want anything more challenging than an easy stroll around the course.

Water hazards look very pretty, but soon become a pain in the butt—just like real life.

most important—a very distinctive difficulty setting. The latter feature comes with one caveat—if you select the easy level, the game becomes absurdly simple, making almost every process from swinging to club selection largely automatic and far too forgiving. Anything above the lowest setting makes for a much more involved and enjoyable game.

The actual gameplay varies little, if at all, from that of other games in the genre. You can select a club, adjust your aim for wind and strategy, change the angle of the club face, and even adjust your stance. After that, it's a simple timing challenge to stop the bar representing your golfer's swing at the correct moment. That will determine how much, if any, hook or slice you apply to the ball. Such play may sound repetitive, but it is in fact involving and relatively stress free.

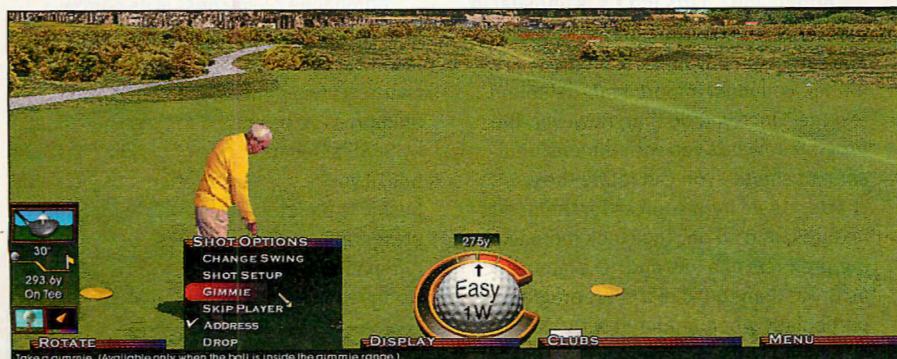
Add to this solid, satisfying fare simple online play features (although finding a quick partner for a game of skins might be harder

than finding, say, a Quake deathmatch) and you have the steak-and-garlic-mashed-potatoes of video games. Setting up online matches is a wee bit convoluted, but once you save your settings, matches are quite straightforward. Luckily, multiplayer games are enjoyable even with your partner sitting in the next cube.

Almost everyone can enjoy Links LS 2000, but it's hardly the most advanced form of entertainment on the planet. Maybe next year we'll get a fancy polygon engine for smooth flybys of the course and polygonal golfers rather than paper cutouts. Until then, it's hearty and fine, just not amazing.
—Frank O'Connor

good news: A sharp, detailed, well-implemented golf sim. Nice interface. Plenty of courses.

bad news: Lots of disk swapping. Ancient graphics engine will happily ignore your new 3D card.



In a little homage to Windows, a pop-up menu appears as you roll over the very bottom margin of the screen—usefully saving screen real estate.

If It's Not Scottish, It's Shite!

Here's a list of other things those canny Scots invented.

PNEUMATIC TIRES: John Boyd Dunlop patented his pneumatic tire in 1888—literally saving your arse.

CURE FOR SCURVY: The first person to publish the idea that consuming citrus fruits would prevent scurvy was Scottish—coincidentally causing, if not coining, the term *limey*.

DECIMAL POINT: The decimal point notation we use today first appeared in a book published in 1616 called *Descriptio* by Edinburgh mathematician John Napier, laird of Merchiston. America has yet to cotton on as far as weights and measures are concerned.

FIRST CLONED MAMMAL: Dolly the sheep, Edinburgh, 1997.

THE HISTORICAL NOVEL: This literary form was “invented” by Sir Walter Scott, author of *Ivanhoe*, *Rob Roy*, and many other historical novels.

LOGARITHMS: Edinburgh mathematician John Napier, laird of Merchiston, invented natural logarithms in the late 1500s. Yes, he was also the decimal point guy.

MARMALADE: A Dundee businessman who imported a shipload of oranges from Spain discovered they were too bitter to sell as fruit. He turned them into an orange preserve, which proved popular.

RADAR DEFENSE SYSTEM: Physicist Sir Robert Watson-Watt was the mind behind the radar network on the coast of England that detected incoming German aircraft in World War II.

THE STEREOTYPE: Although Matt Groening produced the definitive Scottish stereotype in groundskeeper Willie, a Scot invented the *actual* stereotype. Until the invention of the stereotype in 1727, printing houses had to reset printing type for every subsequent printing of a document, as it was not economical to keep the type standing for prolonged periods of time. William Ged, an Edinburgh goldsmith, took a plaster mold of the type and cast the whole page in metal.

Visor Prism

hardware

Company: Handspring

Contact: 888-565-9393 or 650-230-5000, www.handspring.com

Price: \$449 (SRP)

Requirements: PowerPC, Mac OS 8.1 or later, 8MB of RAM, 25MB of free hard disk space, CD-ROM

If you want a PDA to collect all your phone numbers and remind you of that looming dentist appointment, read no further—the Visor Prism is way more than you need. But if you're looking for a device on which you can play beautiful color games and store lovely color pictures of your baby, the Prism should be at the top of your list of things to buy (or, better yet, things to ask for).

The Prism's main shtick is that it displays color—16-bit color, or 65,536 colors, to be precise. That's 8 bits more than the Palm IIIc, the Prism's main competitor, can offer. Of course, on the flip side, the

Palm IIIc costs over \$100 less (as of press time, \$329 SRP). But price issues aside, you'll love the Prism's svelte shape. Sure, it's no Palm V—the Kate Moss of PDA devices—but it's not too bulky either, weighing in at 6.9 ounces. It comes in dark blue and runs on a rechargeable battery, charging as it sits in its cradle. The Prism, which runs version 3.5.2 of the Palm OS, comes with version 2.6 of the Palm desktop software and hot-syncs to your Mac via USB.

As of press time, a handful of color applications for the Prism were available for free download from the Handspring Web site. We liked Zap, an addictive space

shooter; the ubiquitous Klondike game; Active Sky, a streaming media player; and Photo Album, which stores color photos on your handheld.

All in all, the Prism is a fine specimen of a PDA. If you enjoy looking at the world in color—and you can afford to—there's no better choice for Mac users on the market today.—Cathy Lu

good news: Beautiful color display. Great free color applications.
bad news: Not for the budget-conscious. Few color apps available.



PHOTOGRAPH BY AARON LAUER



Adrenaline Charts Pro 1.5

design & graphics

Company: Adrenaline Software

Contact: 877-724-2787 or 418-658-9909,

www.adrenaline.ca

Price: \$399.99 (SRP), \$149.99 (upgrade)

Requirements: Power Macintosh (G3 or faster recommended), Mac OS 8.5 or later (Mac OS 9 recommended), 32MB of RAM (64MB recommended), 5MB of free hard disk space, CD-ROM

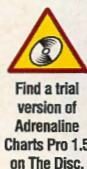
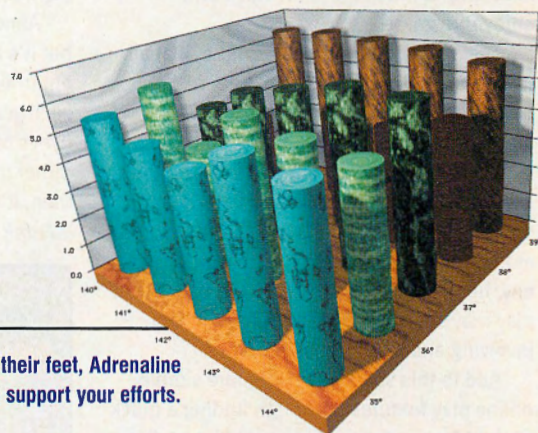
Adrenaline Charts is the one surviving remnant of OpenDoc, a system that replaced "components" (similar to today's applets) with applications. Reinvented as an app, this one-time OpenDoc component continues to produce graphically intensive 3D charts, and it does so very well indeed.

If you're trying to knock people off their feet, Adrenaline Charts can provide the charts to support your efforts.

Adrenaline Charts Pro 1.5 is unusual in that it's a pure charting program; you can't enter data directly into the program. Rather, you must import a tab-delimited text file. Once you do that, however, the program rewards you with dimensional column charts—you can rotate these charts, create light sources for them, add textures, and so on. They look more like the products of a low-end 3D system such as Bryce than those of a chart program, particularly when rendered with Adrenaline's rendering engine. You can create line, column, and pie charts; surface plots; and impressive Web animations.

Adrenaline's weakness is its narrow focus on 3D plotting. It lacks data analysis, technical and statistical charts, and scatter charts. Its two-dimensional charts are unimpressive compared to those generated by SPSS's DeltaGraph or Microsoft Excel. Still, if you're a graphic designer or business professional looking to jazz up presentations and brochures, Adrenaline Charts Pro is a worthy tool.—Ian Sammis

good news: Creates stunning charts.
bad news: No technical or data-analysis charts.





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MacLink Plus Deluxe

utilities

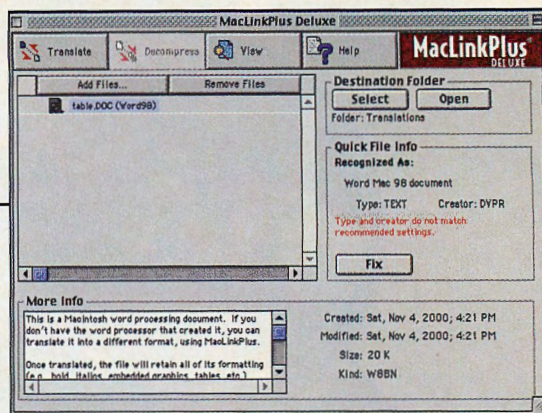
Company: DataViz

Contact: 800-733-0030 or 203-268-0030, www.dataviz.com

Price: \$99.95 (SRP), \$39.95 (upgrade)

Requirements: PowerPC or faster, Mac OS 8.1 or later, 8MB of RAM, 25MB of free hard disk space, CD-ROM, QuickTime 3 or higher for viewing GIF and JPEG files

MacLink's main window allows drag-and-drop file translation.



MacLink Plus Deluxe is a file-translation utility that provides easy, almost painless translation between a large number of Mac and PC file formats. If you often need to open WordStar 6 files or similarly obscure formats, MacLink Plus Deluxe is a crucial addition to your software library.

Unfortunately, version 12 (called Deluxe) isn't much of an upgrade from 11. The only additional translators are for AppleWorks 6, WordPerfect 9, Quattro Pro

9, and Lotus 1-2-3 Millennium. Plus, DataViz removed translators for the original MacWrite, WordPerfect 4.2, and HTML. And while the word-processing program Nisus Writer has gone through two major updates, MacLink Plus Deluxe still translates files into Nisus 4 format. Support for 680X0 Macs is a thing of the past, and some oddities of version 11 remain—for example, when we translated a Word 2001 file with a WordArt picture into AppleWorks 6, the picture simply vanished.

If you're in a situation where you work

with a lot of files from other formats and system types, MacLink Plus Deluxe is an indispensable piece of software. If you use version 11, however, and don't need one of the Deluxe version's few new programs, you can probably skip this upgrade.

—Mark D. Shuchat-Marx

good news: Quick, easy translation between many Mac and PC formats.
bad news: Not much of an upgrade from version 11. No longer works on 680X0 Macs.



Stuffit Deluxe 6.0

utilities

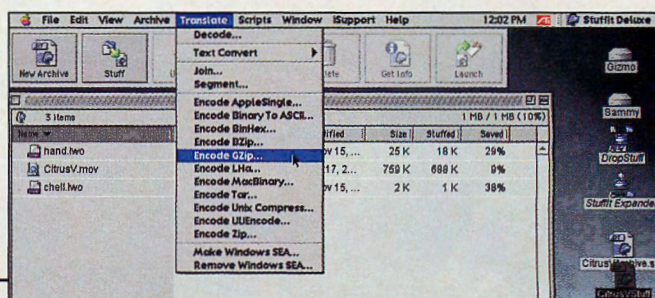
Company: Aladdin Systems

Contact: 800-656-5443 or 831-761-6200, www.aladdinsys.com

Price: \$79.95 (SRP), \$29.95 (upgrade)

Requirements: PowerPC or faster, Mac OS 8.1 or later (including Mac OS X Public Beta), 6MB of RAM, 15MB of free hard disk space, CD-ROM

Aladdin Systems' free Stuffit Expander and its shareware counterpart, DropStuff, are great for the occasional Internet download or file-packing job, but people who frequently compress files, segment existing stuffed files, and make self-extracting archives on both Mac and Windows systems need something more robust. Enter Stuffit Deluxe 6.0—with better cross-platform compression, an easy-to-use toolbar, and new Mac OS X compatibility.



Stuffit Deluxe 6.0 does Windows—and Unix, too.

Version 6.0 has been Carbonized for compatibility with the Mac OS X Public Beta (and presumably with the upcoming final version), although the Finder-based portions of Deluxe will not work in OS X.

Both Mac OS 9 and OS X users will welcome a few other improvements. First, a prominent, easy-to-read toolbar replaces the tiny floating palette of earlier Deluxe versions. Second, Deluxe now tries to recover files from broken archives. If you suspect a compressed file may be damaged, you can examine the file from within Deluxe and then attempt to recover the data. Also new, the ReturnReceipt feature e-mails senders automatically when recipients receive and expand a stuffed file. Plus, the ArchiveSearch program in Deluxe can search for stuffed files within archives.

Cross-platform types will appreciate the option to translate archives into a variety of compression formats, including ZIP for Windows (also self-expanding EXE), and TAR for Unix. Deluxe can still break existing archives into segments, ranging from 1.4MB for floppies to 645MB for CD-R/CD-RW disks.

Unfortunately, due largely to its Carbonization, Deluxe no longer works on 680X0 Macs. But anyone with a PowerPC-based Mac, especially people who often trade files with Windows users, will find Stuffit Deluxe 6.0 a worthwhile upgrade.

—Mark D. Shuchat-Marx

good news: Cross-platform compression. Highly visible toolbar. Carbonized for Mac OS X. Searches within archives. **bad news:** No longer works on 680X0 Macs.



echo 30GB

hardware

Company: OnStream

Contact: 800-759-4621 or 303-772-9000, www.onstream.com

Price: \$499 (SRP); \$44.95 per cartridge

Requirements: Power Macintosh with built-in FireWire port, Mac OS 8.6 or later, FireWire Extension 2.4 or later, 16MB of RAM, 32MB of hard disk space

OnStream, a spin-off from Phillips, is a company with a single purpose—to bring its ADR (Advanced Digital Recording) technology to market. With its echo 30GB drive, OnStream has reached a milestone: Thanks to the speed of the FireWire interface, it has finally created a Mac tape drive that shows off the technology to full advantage.

Tape drives are the ideal storage mechanism for folks who really care about backups. They're cheap—at \$44.95 for a 15GB cartridge, you're looking at three times as much storage per dollar as you get with

DVD-RAM, and that's before you take into account the 2:1 compression typical of tape drives. They're also capacious and easy to archive. Their only real defect is slowness—at a peak speed of 2 MBps, they're simply too slow for backup dilettantes. Still, if you want to back up your drive consistently (always a good idea), just run Retrospect (the \$150 program comes bundled with the drive), stick in a tape, and go to bed.

While no one in their right mind would call tape drives speedy—keep in mind that they take just as long to read as to write, so you simply can't use a tape drive the way

you'd use a hard drive or Zip disk. However, the echo is very quick for a tape drive. Our test 2.3GB backup ran in slightly less than an hour, compared to nearly 90 minutes on the iMation Travan drive we also reviewed for this issue. Don't let the hideous avocado-green case put you off—the echo 30GB is one heck of a tape drive.—*Ian Sammis*

good news: Faster. Bigger. Better.
bad news: The terms faster, bigger, and better are relative to other tape drives only.



PHOTOGRAPH BY AARON LAUER



Travan FireWire 20GB Drive

hardware

Company: iMation

Contact: 888-466-3456 or 651-704-7456, www.imation.com

Price: \$499 (SRP), \$33.99 per cartridge

Requirements: Power Macintosh with built-in FireWire port, Mac OS 9 or higher, 64MB of RAM, 32MB of hard disk space

Tape drives have always lurked at the outer edges of the consumer market. Sure, tapes are cheap (at \$33.99 per 10MB cartridge, they sell for a tiny fraction the cost of Zip disks and a bit more than half the cost per gigabyte of DVD-RAM) and have a huge capacity—but tape drives have traditionally been expensive and slower than molasses in winter. The new iMation Travan FireWire drive has a price low enough and tapes spacious enough to crack

the consumer market—at least for folks who are serious about backups.

The \$499 price of the drive might appear high, but it includes a full copy of Dantz Retrospect (www.dantz.com) that would cost \$150 to purchase separately.

Retrospect is currently the ultimate in Macintosh backup software, and with giant tapes that can squeeze in 20GB per device, it really shines. If you've ever done a backup onto CD-R or (heaven help you) Zip, you probably remember enduring a hellish process, spending hours slamming disk after disk into a drive and trying to keep the resulting mess of media organized. With 20GB tapes, you just set the drive to back up in Retrospect, insert the tape in the Travan drive, then take a walk. Don't sit around and watch—the speed, while good

for a tape drive, is still pitiful by any other standard. It took us almost an hour and a half to back up our 2.3GB disk. (Subsequent backups of that drive would go faster, thanks to Retrospect's progressive backup capabilities).

If you back up about once a millennium and try to call printouts a "backup strategy," skip the Travan FireWire 20GB drive—you won't find it worth the price. If you've been dutifully maintaining dusty piles of CD-Rs as insurance against the day your drive packs it in, get the Travan drive—and relegate those discs to target practice.—*Ian Sammis*

good news: Relatively inexpensive. Easy to use. **bad news:** Like all tape drives, it's slow, slow, slow.



It's slow, but it'll eventually put the contents of your 20GB drive onto a single tape.

PHOTOGRAPH BY AARON LAUER



Camedia C-2100 Ultra Zoom



PHOTOGRAPH BY AARON LAUER

hardware

Company: Olympus

Contact: 800-347-4027 or 631-844-5000,

www.olympus.com

Price: \$999 (SRP)

Requirements: Power Macintosh with USB or a serial port, Mac OS 8.6 (7.6.1 for serial), 32MB of RAM, 100MB of hard disk space, QuickTime 4.0 (for video)

If you've been having trouble deciding between the expense of a professional digital camera and the relatively poor lens versatility of a consumer, Olympus may have the answer in its new Camedia C-2100 Ultra Zoom. The C-2100, sporting a 10X optical zoom and a decent macro lens, is an extremely versatile product. It's a low-end professional camera at a high-end hobbyist's price.

While the C-2100 lacks the resolution of other digital cameras in this price range (2.1 megapixels, versus the similarly priced 3.4-megapixel Olympus Camedia C-3030), it makes up for its smaller pictures with a host of other abilities and attributes. Along with its impressive 10X optical zoom capability, the C-2100 boasts digital image stabilization



The macro setting got us close...*too* close.

Speak softly, but carry a big lens. You won't get tired—this camera is lighter than it looks.

and an SLR viewfinder (this lets you look directly through the lens, instead of requiring an approximation from a rangefinder or second set of lenses). Press the button next to the cute little flower icon on the camera, and you've activated the macro mode, which can produce some very impressive close-ups.

The C-2100 provides ample opportunity for tinkering with more-advanced photographic settings. It offers an easy-to-use batch of presets for action shots, portraits, and night scenes—the resulting image quality was great. Those souls who want to brave the sometimes difficult interface can spelunk into the dark recesses of the camera's functions to adjust image quality through controlling aperture, shutter speed, white balance, and the usual settings. A 16MB built-in buffer allows you to take faster consecutive pictures, and (in all but the TIFF-capture mode) provides a five-shot, 1.5-fps burst mode. If you want to cross the line into video, the Camedia Ultra Zoom can even record short QuickTime movies (320 by 240 or 160 by 120 at 15 fps), with or without sound.

The C-2100 hardware package comes with a USB cable (which you'll need if you don't have a SmartMedia card reader), an 8MB SmartMedia card, a remote control (in case you want to be part of the action, run a slide show, or avoid jiggling the camera), and an AV cable for TV viewing. The software package includes Camedia Master 2.0 (also a necessity—along with the

Any way you want it, that's the way you'll get it. We came up with some neat shots while messing around with shutter speed settings.



forementioned USB cable—if you don't have a SmartMedia card reader) and Adobe PhotoDeluxe 2.0. Camedia Master 2.0 can satisfactorily serve as a means of downloading your photos from the camera, or you can brave its Windows-like interface to organize, catalog, and perform simple photo-editing functions.

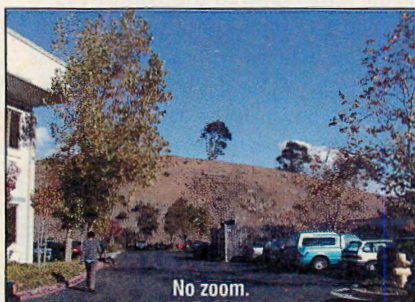
All said, if you are a photo enthusiast or hobbyist willing to spend a grand on a camera, this is a versatile and high-quality choice.

—Christopher Imlay

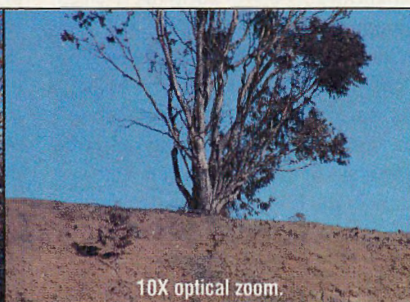
good news: Great lens versatility.
bad news: Only 2.1 megapixels.



spiffy



No zoom.



10X optical zoom.



10X optical zoom, plus 2.7X digital zoom.

A tree grows in Brisbane.

Kidz Stuff

Clifford Thinking Adventures

Company: Scholastic

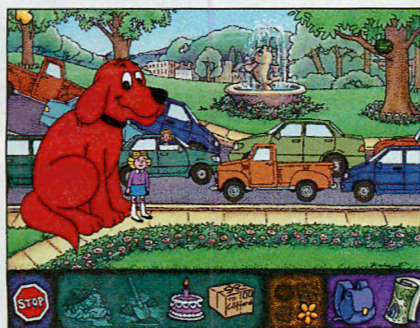
Contact: 800-724-6527 or 212-343-6100,
www.scholastic.com

Price: \$19.95 (SRP)

Requirements: 120MHz PowerPC or faster, System 7.5.3 or later, 16MB of RAM, 35MB of free hard disk space, CD-ROM

Don't let Clifford Thinking Adventures' simplistic graphics deter you from buying this game for kids ages four to six. They won't mind: The gameplay is smooth, and the teaching is appropriately subtle.

In this typical scavenger-hunt-style game, kids run errands before the big party starts for Clifford's birthday. They can decorate a cake, play matching games while cleaning up the backyard and a toppled store display, and follow directions to clear up a traffic jam.



Isn't there a leash law?

The developer's attention to detail overrode our irritation with a few sound glitches and CD crashes. The CD continually saves the game so you don't lose your progress, and the AI actually works—the responses change depending on what's already happened. There's no annoying wait for screens to load, and the game changes enough on subsequent adventures to make it fun to play more than once.

In short, we get the feeling that someone made an enormous effort to create this CD, befitting the beloved enormous red dog.

—Carrie Shepherd

good news: Fun yet educational games. **bad news:** CD could play more smoothly.



spiffy

Arthur's Camping Adventure

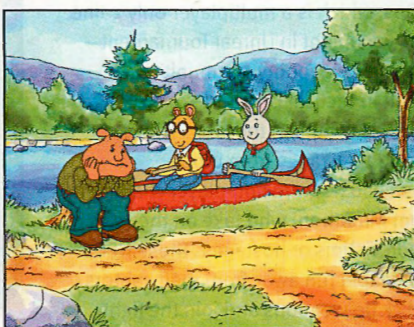
Company: The Learning Company

Contact: 800-358-9144 or 415-382-4400,
www.learningcompany.com

Price: \$29.95 (SRP)

Requirements: 120MHz PowerPC or faster, System 7.5.1 or later, 16MB of RAM, 50MB of free hard disk space, CD-ROM

In this adventure for kids ages three to seven, PBS star Arthur becomes a hero on a class camping trip after the supervisor twists his ankle and retreats to his tent. Arthur and pal Buster embark on a mission to collect the parts classmate Brain needs to build a signaling device.



Stealing a canoe is just one of the no-nos Arthur commits while camping.

While the adventure is entertaining, the CD is a bit clunky. The list of items to collect varies slightly, depending on which of three rescue devices (radio, kite, or Morse-code signal mirror) kids choose to have Brain build, but not enough to challenge older players in this age range.

Attempts to enrich the CD with extras, such as a nature notebook that doles out facts on plants and wildlife, seem feeble: Our notebook had just three entries after we completed the game. The minigames are lame as well. For example, kids guide Arthur up a cliff and through a dark maze, which requires trial and error rather than smarts.

Overall, the educational aspect is nearly nil, and even the entertainment value is a bit thin.—Carrie Shepherd

good news: Decent story line. **bad news:** Game won't challenge older players.



yeah,
whatever

Lego Kindergarten My Style

Company: Lego Media

Contact: 800-749-2291, www.legomedia.com

Price: \$19.99 (SRP)

Requirements: 200MHz PowerPC or faster, System 8.1 or later, 32MB of RAM, 15MB of free hard disk space, CD-ROM

Lego bricks are classic toys. Too bad this horrible CD-ROM fails to live up to its potential.

Many tasks in this game involve word recognition, addition, and subtraction tasks too difficult for the recommended age range of four to six years. Others are just plain dull. In what seems more like an exercise in patience than a lesson in prepositions, one game tells kids to click the bouncing ball that's "over the barrel" or "under the barrel." You have to listen to the same instructions repeatedly until the ball actually does go over or under the barrel.



Jimmy Nasium (get it?) helps kids learn to count by fives. He's a good pal of Matty Matics.

Though the disc is packed with activities, many of them (particularly the musical ones) didn't work properly. Kids are supposed to click on the instruments a band is playing in the order in which they're played, but no music ever starts. Another activity has kids moving levers up and down to make music louder or softer—but again, no music plays. Calls to technical support to remedy this problem proved fruitless. The system is automated, and Macintosh is not one of the tech support choices for operating systems.—Carrie Shepherd

good news: Classic concept. **bad news:** Poor execution.



blech!

powerplay

Do you remember when we said no more Unreal Tournament? We lied.

Man down! Man down!

Tactical Ops Mod Gives Unreal Tournament New Life



Find Tactical Ops 4.3.6 UT MOD, a Cro-Mag Rally demo, and Unreal Tournament 4.3.6 updaters on The Disc.

A while back, we gave you instructions about imbuing Unreal Tournament with new life using files known as mods. Most of the time, these amount to new skins, maps, or relics while the game itself stays essentially the same.

Tactical Ops (hosted at www.tactical-ops.net), a mod that's currently being developed for Unreal Tournament, goes much further than that. It remakes the game with all-new maps, weapons, and styles of gameplay.

In Tactical Ops, you choose from one of two teams: Special Forces or Terrorists. If you choose Special Forces, your mission in life is to protect the world by rescuing hostages and killing terrorists. If you're a Terrorist, on the other hand, you get your jollies by capturing hostages and killing Special Forces operatives.

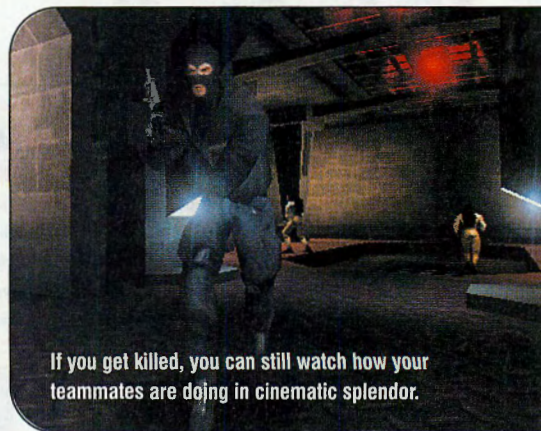
There are tons of modifications in Tactical Ops, which is a multiplayer-only game. You won't find rocket launchers lying around, as you might in Unreal Tournament—instead, you have to go back to your base to buy new weaponry, ammunition, explosives, and armor. Gameplay is more difficult in Tactical Ops, too—once you're dead, you stay dead, although your teammates may complete the job.

The environments are completely new, and they range from urban landscapes to dams. Also new are non-player characters (think BOBs from Marathon) who take on the roles of assassination victims or hostages. These NPCs can try to escape, run away from their captors, or even pick up weapons and join the fight.

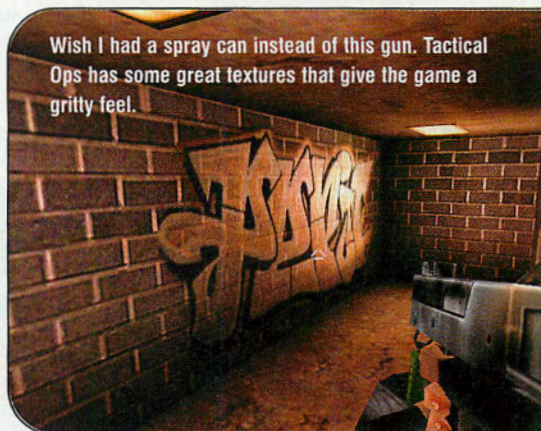
Right now, Tactical Ops is unfinished. It's currently in beta release, and the date for the final version hasn't been set. The beta (on The Disc) is a lot of fun, though, and well worth trying, especially given its price—free. One word of warning: If you try to download the latest version of Tactical Ops, be prepared to go grab lunch. It weighs in (unstuffed) at over 100 megabytes.—DR

How To Try Tac Ops

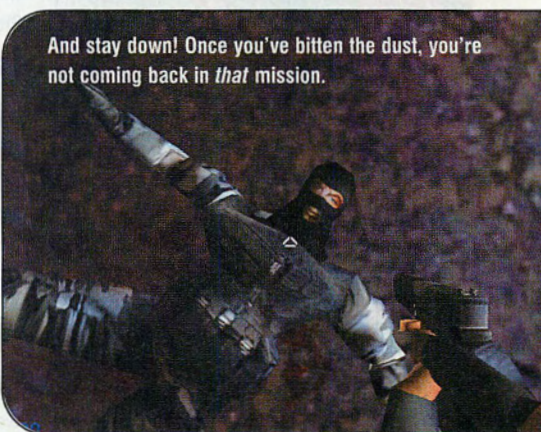
- Install the Unreal Tournament 4.3.6 updaters (on The Disc).
- Install the Tactical Ops mod by dropping the file TacticalOps16.umod on the Umod installer—it'll guide you through the process.
- To start a Tac Ops game, start a new multiplayer game and choose Tactical Ops from the game-type pop-up menu.
- Start the game, and you should be faced with a choice: Do you want to be a cop or a robber? Make your choice and start shooting!



If you get killed, you can still watch how your teammates are doing in cinematic splendor.



Wish I had a spray can instead of this gun. Tactical Ops has some great textures that give the game a gritty feel.



And stay down! Once you've bitten the dust, you're not coming back in *that* mission.



If you have some extra cash, you can pick up some extra gear, including armor, explosives, or ammunition.

The Rainbow Connection

Rogue Spear Makes Its First Mac Appearance

Your neighbors might erroneously think some dancers have suddenly taken ill when you start screaming "Tango down!" whilst immersed in *Rogue Spear*, the follow-up to *Rainbow Six*. Just tell 'em to "roger" that, 'cause "charlie" might be on your "six" if you're not careful! Uh, anyway...

Rogue Spear is the latest in the *Rainbow Six* line, and it's finally made it to the Mac, at least in beta form. (The final version is slated to ship very soon.) It comes bundled with the Urban Operations Mission Pack, and it improves upon its predecessors in many ways. It adds new weather effects such as snow and rain. You can see your teammates' breath in cold climates, and footprints in some snow and mud levels. It boasts a new user interface and a lengthy list of new levels: 18 single-player and 10 multiplayer levels from *Rogue Spear*, and an additional

five single-player levels from *Urban Ops*. There's a bevy of new weapons and special items, our favorite being the sniper rifles (with a corresponding set of new team commands). In the *Urban Ops* mode, there's a fabulous new "custom mission" section where you can enter any of the levels and play a variety of scenarios.

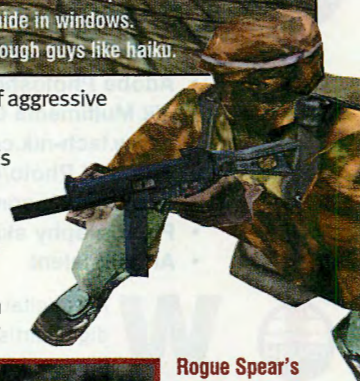
Rainbow Six is a first-person shooter, but success depends on very different skills than your average *Quake III* or *Unreal Tournament* type frag-fest. Unlike most games, one shot usually kills you and there are no power-ups. You'll find yourself becoming cautious and

sneaky instead of aggressive and brash.

Rogue Spear is a must for fans of *Rainbow Six*, and an awesome alternative for other first-person shooter fans.—CI



Beware Kosovo snipers. They hide in windows. Even tough guys like haiku.



Rogue Spear's sniper rifle lets you get right to the point of impact. Notice the snow flakes—weather conditions really matter.



Gentleprehominids, Start Your Engines

Low Brow Ridge Racing Game

Cro-Mag Rally, the latest 3D extravaganza from Pangea Software (www.pangeasoft.net/cromag) combines the best elements of *Star Wars Episode 1 Racer* and *The Flintstones* in one wheel-spinning, time-traveling—and highly charming—racing game. In this \$39.95 game, you can play against your Mac, another player in split-screen mode, or even go up against six other racers over a network as you drive your way through deserts and jungles in several different historical epochs. Along the way, you can pick up such niceties as bone bombs, heat-seeking homing pigeons, and sticky tires (which always seem to be littering race tracks).

You can choose from one of several crude vehicles with such delightful names as Bone Buggy and Geode Cruiser, and if straight-up tournament racing isn't your style, you can also play games such as Tag, Capture the Flag, or Survival. The graphics are stunning, and the gameplay is addictive—and tough.—DR

It's amazing what some rocks, bones, and a pair of calloused feet can do when it comes to high-action racing.



Screenshot of the Month

This month, we print our first *Diablo II* screenshot—a necromancer fielding one of the biggest unholy armies of the night we've ever seen. To get your shot in print, send your best to letters@macaddict.com, and we'll look them over.



Artist's Statement

You asked for best and brightest, how about darkest and bloodiest? This is one big mess of blood and bones. I hope you like it!—Steve Gale

how to

How to do it all—and live to tell the tale.

Paint a Photo in Photoshop

by Ian Sammis; art and technique by Judy Mandolf



WHAT YOU'LL NEED

- A digital camera (we used a Nikon CoolPix 950)
- Adobe Photoshop 5.5 or later (www.adobe.com)
- nik Multimedia Color Efex Photoshop plug-in (www.tech-nik.com/english/colorefex.html)
- Auto F/X Photo/Graphic Edges Photoshop plug-in (www.autofx.com)
- Photography skills
- Artistic talent



This stuff's for the pros.



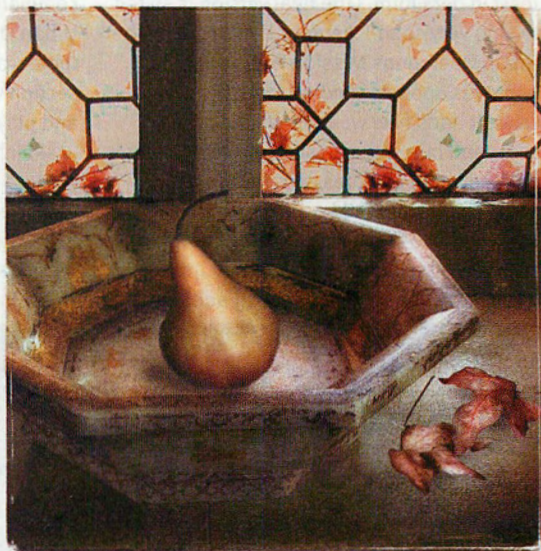
It'll take some effort, but you can do it.



The fundamentals, if you will.

While digital photography is an art form in its own right, many digital artists augment their photography with the broad array of bitmap-editing software available for the Mac. To show how you can employ these techniques to turn your own photography into a work of art, we'll take you through the creation of Judy Mandolf's 1999 piece, *Autumn Window*. Thanks to a combination of Photoshop techniques and some advanced third-party filters, we transformed *Autumn Window* from a simple photograph into a stunning work of art.

If you follow this how-to exactly (and if you've got the requisite skills), you'll end up with an image strongly resembling Judy Mandolf's style. That's not necessarily the best idea. Instead, use the techniques we show you here as a guide, but experiment with each step to develop a unique style, one that matches your own interests and sense of aesthetics. This way, you'll have more fun and your artwork will be the better for it. That said, here's how to transform a photograph into a piece of art.



We'll take you through the creation of Judy Mandolf's *Autumn Window* image.

The Art of Judy Mandolf

Judy Mandolf's artwork combines her talent for photography with a strong interest in digital manipulation. Using Photoshop, Studio Artist, Painter, and a broad array of filters,

she has created a highly distinctive style that has made her one of Southern California's leading digital artists. Here is a sampling of her artwork.



Stonehenge,
1999



Two Books,
2000



Purple Vase,
2000



Collage,
2000

1 The Photo

While it's possible to create digital artwork from scratch on the computer, it helps to start with a good photograph. Digital photography is a very broad field, extending wildly beyond the scope of this article; if you want digital photography advice, you'll find entire publications on the subject. (Beginners should see "3 Tips for Novice Photographers," p70, for general advice.)

For this example, start with a still-life photograph taken in natural light. This will make for a softer, less sharply defined image. Judy took this photograph at an English castle with a Nikon CoolPix 950. While she loved the light and the bowl, Judy found the overall image a bit dull.



In its raw form, the image is a bit dark and has a slight cyan cast.

2 Clean Up Obvious Glitches

Before you start working on the details, clean up any parts of the photo you really don't want to see in the final image. You can often clean up by simply copying portions you like and layering them over rougher areas.

In Photoshop, select the part of your image to replicate with one of the marquee tools. Choose Copy from the Edit menu, then Paste the duplicate in the desired location. A copy of the selected region will appear in a new layer. If the replication is too obvious, choose Flip Horizontal or Flip Vertical from the Transform submenu of the Edit menu to reverse the selected region—this often does a surprisingly good job of disguising a simple copy and paste.

As an example, consider *Autumn Window*—the left window was originally both overexposed and uninteresting, and the beam that separates the windows is badly weathered. To fix up the image, Judy copied the right window to the left side, reversing it horizontally (you can see how well that disguises the image—did you notice the replication until just now?). She also replicated clean portions to create a newer-looking, less-weathered beam.

You don't always have to do fancy tricks with adjustment layers and masks—sometimes the simple tools are all you need.



Marquee tool

Move tool

Dodge, sponge, and burn tools

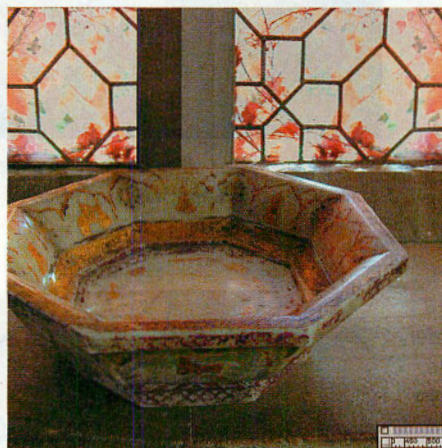


A mirrored version of the right pane replaces the left one, making the window's overexposed portion disappear.

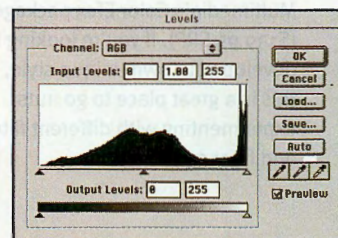
3 Colors, Crop, and Sponge

Once you've covered up the most obvious defects in the image, it's time to start fixing the coloration. Start by flattening the image via the Layers palette. To fix the overall brightness level, choose Levels from the Adjust submenu of the Image menu. By dragging the gray triangle to the left, you brighten the entire image; dragging to the right darkens it. To fix color casts such as the slightly cyan tint the CoolPix 950 created in *Autumn Window*, choose Color Balance from the same Adjust submenu of the Image menu, then nudge the image away from the color cast. If the image looks too cyan, for example, drag the uppermost slider away from Cyan and toward Red.

For more-detailed adjustments, you can use the sponge tool to increase or decrease the saturation of dark or light portions of the image. To do this, select the sponge tool, set the pop-up menu in the tool bar (in Photoshop 6) or tool palette (in older versions of Photoshop) to Saturate or Desaturate, then drag the tool over the portion of the image you want to alter. You can see the results in *Autumn Window*—Judy made the gold leaf on the bowl gleaming and bright by setting the sponge tool to saturate. She also lightened the dark shadow on the underside of the bowl. (Along the way, Judy cropped out the remnants of the sign on the left side of the bowl, which looked decidedly strange after having its top removed in the preceding step.)

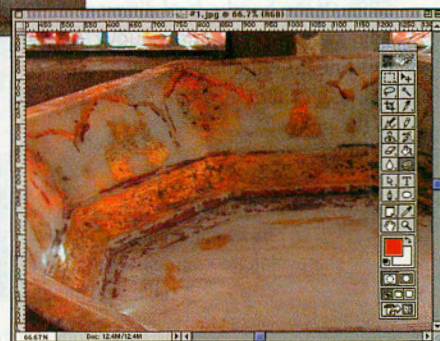


After some sponging, the gold leaf on the bowl looks crisp and bright, and the underside of the bowl isn't so dingy.



Moving the gray triangle adjusts the image's overall tone.

The sponge tool has dramatically increased the saturation of the gold leaf on the left side of the bowl.

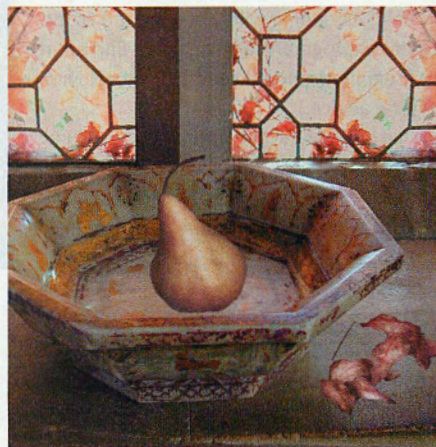


4 Add Elements from Other Images

Now that you've color-balanced the image, you can add elements from other images. To add an object, select it (see "Uncluttering the Image," Aug/00, p82, for a fuller discussion of how to do this), choose Copy from the Edit menu, bring your new image to the front, and choose Paste.

When you paste the elements in, they probably won't look quite right—their highlights and shadows won't match the image you're working on. To fix that, unfortunately you'll need some genuine painting skills. If you've got them, use the paintbrush tool to paint highlights onto the object so they match the lighting conditions of the new image. Similarly, use the burn tool to darken portions of the objects that should appear in shadow. The burn tool behaves basically like a paintbrush, but it darkens the image. You can choose which parts of the image to darken by selecting Midtones, Highlights, or Shadows from the pop-up menu in the burn tool's tool bar or palette.

In *Autumn Window*, Judy wanted to emphasize the seasonal feeling of the image, so she added a pair of leaves and a pear. Shet took these two images from separate photos, then pasted them in.



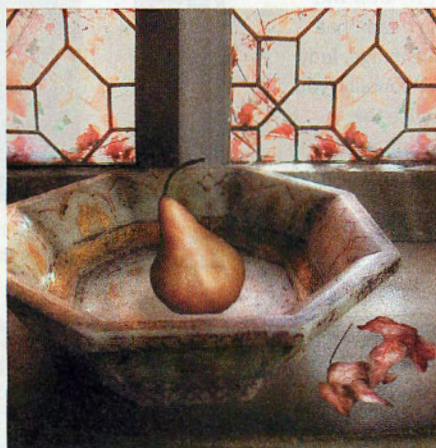
The pear and the leaves came from two different images, but with a bit of work via the paintbrush and burn tool, they look like part of the original image.



Here are the leaves in the original photograph. The pear came from a third photo.

5 Stylize the Image

At this point, you should have an image that still strongly resembles the original photograph, albeit with additional elements. Now that you've got all the elements in place, you can stylize the image. To achieve the grainy, diffuse look of the image we're studying, use the Monday Morning filter from nik Multimedia's Color Efex package (\$139.95 SRP). If you're looking to develop your own unique style, this is a great place to go nuts experimenting with different filters and filter combinations.

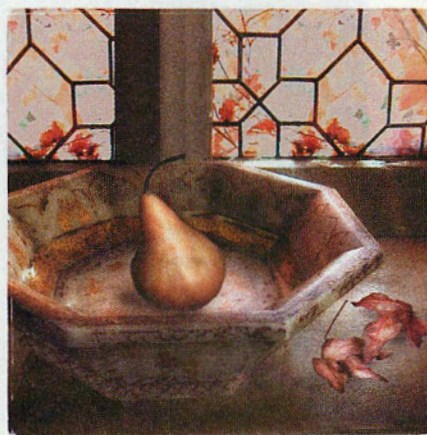


With the application of the nik Color Efex Monday Morning filter, the image has taken on an approximation of its final look.

6 Finishing Touches

To add the soft pastel border on the image, use the Auto F/X Photo/Graphic Edges filter (\$199 SRP). Of the hundreds of different edges the package offers, Judy chose this one for *Autumn Window* because it doesn't cut deeply into the center of the image.

By adding an edge effect and sharpening the contrast, Judy arrived at the final image.



3 Tips for Novice Photographers

Judy Mandolf has been a photographer for over a decade. When we asked her what advice she'd give beginners, she shared these tips with us.

It's not the camera, it's the photographer.

Don't get too tied up with looking for the "ultimate" camera. Work on your technique instead—it'll make a much greater difference to the quality of your work than having a few more pixels in the final image.

Pay more attention to your subjects than to technique.

Getting a technically perfect photo is less important than capturing the reason you're taking the photograph in the first place. Don't get so tied up with minor technical details that you lose track of the subject matter.

Develop your own style.

Don't try to replicate someone else's style—you'll end up with a poor imitation. If your work doesn't reflect your own interests and personal perspective, it won't be nearly as good as it could be, regardless of your technique.

Judy Mandolf, a professional artist and painter, lives in San Diego. You already know Ian.

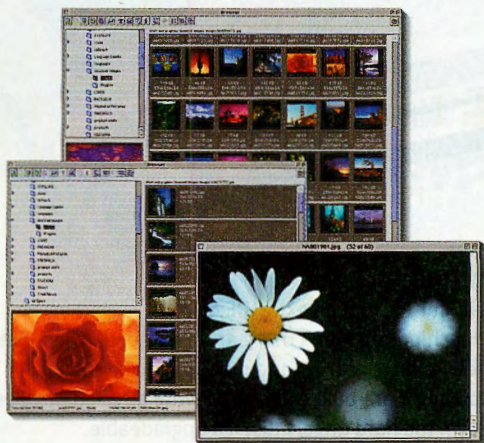
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www.ACDSYSTEMS.com/mw

Turn an IDE Drive into a FireWire External Drive

by Ian Sammis



WHAT YOU'LL NEED

- An internal IDE hard drive
- An external FireWire drive enclosure (widely available from computer stores; typically around \$140)
- Total Recall's Heat Utilities (freeware, www.macpistop.com) or FWB's Hard Disk Toolkit PE 4.0.1 (\$49.95, www.fwb.com)

When Apple first introduced the iMac in mid-1998, it looked for a time as though the era of the external hard drive had ended. While USB is quick enough for keyboards, joysticks, and the like, it's wildly inadequate for storage devices that routinely deliver data at speeds in excess of 120 Mbps (ten times USB's limit). Fortunately, all that changed when Apple introduced FireWire seven months later. FireWire can toss data around at up to 400 Mbps—easily fast enough for hard drives.

FireWire drives aren't actually *FireWire* drives—they're standard, inexpensive IDE drives with a FireWire interface slapped on the back. For the moment, this is a good thing—it means FireWire drives aren't likely to end up in the sort of backwater that low-end SCSI drives inhabited in the early 1990s, when most vendors switched to IDE. If you can afford the \$140 it costs to buy a FireWire enclosure (a

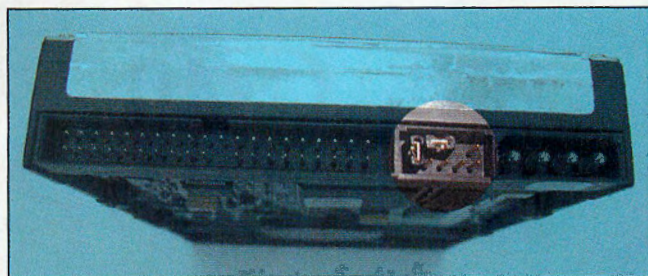
box with a power supply, a FireWire interface, and cables), you can quickly turn an extra IDE drive (taken from a machine you aren't using anymore, for example) into an external FireWire drive. While \$140 may sound like a lot, it's cheaper than buying a pre-built external FireWire drive—particularly if you already own the hard drive. Plus, it's upgradeable.

PHOTOGRAPH BY AARON LAUER

1 Set the Drive to Master Mode

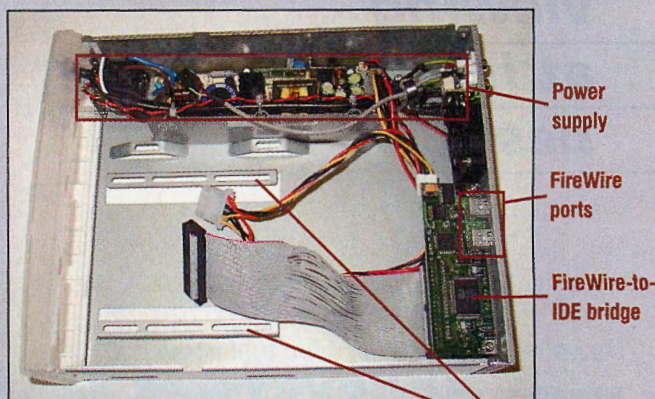
You can set IDE hard drives in one of two modes: master (device 0) or slave (device 1). Since your drive will be the only device on its IDE bus, set it to master mode by moving the jumpers into the appropriate configuration (consult your hard drive's manual, your vendor's Web site, or www.thetechpage.com to find out how to set the jumpers).

For the Maxtor 45GB hard drive we used, this jumper configuration sets the drive to master mode.



Finding Enclosures

The trickiest part of this how-to is finding a FireWire enclosure. They're available from the geekier sort of computer store (Fry's Electronics, for example) and from many online dealers—but ask for one in most consumer-based stores and you'll get nearly the same reaction you'd get if you asked for a phaser rifle. A FireWire-only online store, www.firewiremax.com, offers three different types of FireWire chassis on its Other Devices page, for prices ranging from \$140 to \$180; you'll find the same enclosures at many online sources (www.cdw.com, www.macwarehouse.com, www.maczone.com, and all the other folks who populate the pages of *MacAddict* between *Ask Us* and *Shutdown*). Unless you've got an older Mac that didn't come with FireWire, don't buy one of the enclosures that come bundled with a FireWire card—the card typically adds an unnecessary \$40 to the cost of the package.



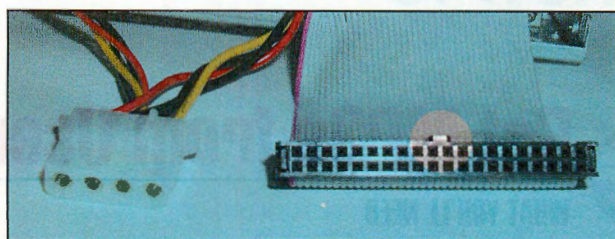
Here's a typical FireWire enclosure for an IDE drive.

Mounting rails

2 Attach the Cables and Install the Drive

Once you've got your FireWire hard drive enclosure (see "Finding Enclosures," p72), open it up and look inside. The enclosure should provide two internal cables—a squat, four-pronged plug that supplies power, and a broad ribbon cable that carries the IDE information. Plug each of these into the appropriate port on the hard drive. The IDE cable should have a small raised plastic key that only allows you to insert it with the correct orientation—don't try to force the cable in upside-down!

Once you've plugged in the drive, attach it to the enclosure with mounting screws, following any supplied instructions.



Make sure to match the key on the IDE cable with the notch on the hard drive—if you plug it in inverted, you risk losing the hard drive (at the very least, it just won't work).

3 Install Your Driver Software

Mac OS, at least as of version 9.0.4, does not come with built-in drivers for FireWire hard drives (this will change with Mac OS X). You have at least two good options. If you have Hard Disk Toolkit PE 4.0.1 from FWB Software, you won't have any problems; this package now comes with FireWire drivers. If you want to save yourself the expense, head on over to Total Recall's Web site, suffer through its tedious registration process, then download its freeware FireWire drivers, Heat Utilities. Once you've installed Heat Utilities or Hard Disk Toolkit PE, you should have everything you need to mount your hard drive.

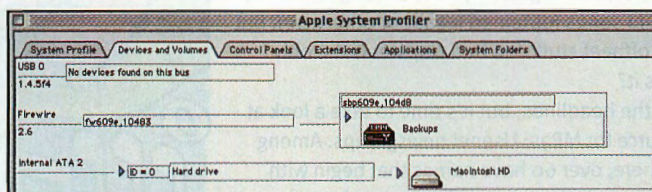


It's hard to argue with the price of Heat Utilities—basically just a tiny amount of keyboard wear and tear as you fill out the form on its Web site.

4 Plug It In

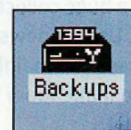
Now all you have to do is turn the drive on, plug it into your Mac, and format the drive (if you didn't already)—and you should have a fully functional external FireWire hard drive.

Remember, while FireWire is hot-pluggable, Mac OS is just as averse as ever to having its hard drives suddenly disconnected. If you want to unplug your FireWire drives while the machine is still running, make sure to Put Away (Command-Y) any partitions on the FireWire device before you pull the plug.



When you plug in your hard drive, it should appear in your FireWire chain in the Apple System Profiler.

More important, it should show up on your desktop!



Ian Sammis is glad this one's done, so he can have his drive back!

Troubleshooting: What if Something Goes Wrong?

Fiddling with hardware often results in odd errors and glitches. Here are some of the more common problems—and how to fix them.

PROBLEM: The hard drive appears to work fine, but has about half the capacity it should have.

SOLUTION: Check the jumper configuration on the drive to make sure you haven't inadvertently turned Cylinder Limitation on. If you have, the hard drive will intentionally not use a portion of the disk to retain compatibility with older IDE controllers on some PCs.

PROBLEM: The drive won't power up unless you plug in an external power supply.

SOLUTION: Although FireWire does supply power, a single 3 1/2-inch IDE drive requires more power than FireWire chain can supply. There are hard drives that are designed to run off of the FireWire-supplied power, made by companies like VST (www.vst.com). These are built using more expensive, low-power PowerBook hard drives. If you absolutely must have a FireWire-powered hard drive, see if you can find a broken VST drive; you should be able to replace the defective hard drive with a standard 2 1/2-inch notebook drive and be good to go.

PROBLEM: Your PowerBook sometimes fails to mount the FireWire hard drive.

SOLUTION: The early FireWire PowerBooks have a firmware problem that can keep them from connecting properly to FireWire hard drives. Go to <http://asu.info.apple.com> and search for PowerBook Firmware Update 2.7. Once you install it, your FireWire drive should appear much more consistently.



If you replace the hard drive from a broken VST drive with a standard 2 1/2-inch notebook-style drive, you can make the new drive bus-powered.

Get MP3s from Usenet Newsgroups

by Joseph O. Holmes



WHAT YOU'LL NEED

- MT Newswatcher (www.smfr.org/mtnw)
- A Usenet account

Of course we respect artists' rights to royalties—but you'll find plenty of good music out on the Internet that artists are perfectly willing to share without insisting on royalty payments. For that reason alone, Napster is a godsend—or would be, if not for the hassles you'll encounter in actually using it.

Napster users are painfully aware of its shortcomings. Even without the upcoming Big Label Ownership and new monthly fees, Napster is much better at grabbing individual songs than downloading entire albums. Log on to Napster and you may be dealing with an overloaded machine sitting on someone's desk at work—hence the busy servers and timed-out downloads. And the worst problem—Napster is great if you're looking for readily available mainstream songs (obtained legally or otherwise), but it's not so great for offbeat stuff. Too bad Napster is the only game in town—or is it?

Napster makes the headlines, but it's time to take a look at the other major source for MP3s: Usenet newsgroups. Among the hundreds out there, over 60 have names that begin with `alt.binaries.sounds.mp3` (affectionately known as `absm.*`), and these groups store a huge collection of user-uploaded MP3 files.

Unlike Napster, Usenet newsgroups store posted songs and text on Usenet servers run mainly by ISPs. Because the posts eventually expire to make room for incoming files, the music turns over constantly.

You can request specific tunes and hope a friendly user will upload your requests. But newsgroups are also terrific for

serendipity—you may stumble across any number of great songs you'd never know about otherwise. Here's how to boost your MP3 collection without ever seeing a single "Sorry, all servers are busy" dialog box.



ILLUSTRATION BY ANDY RASH

What the Heck Are Newsgroups, Anyway?

Usenet newsgroups have nothing to do with news. Though the Web and email are the Internet's best-known services, Usenet is its main bulletin board, providing a large, distributed message-board system that resembles CompuServe's Forums and AOL's Message Areas.

Newsgroups gather articles (message postings) into groups arranged by topic. Want to know how to use your new Gaggia espresso maker? Head to `alt.coffee` and post an article—a potential audience of millions will see your question. One or two will probably post an answer in a few hours or a day.

While text conversations lie at the heart of Usenet, we're primarily interested in binary files. The Unix uuencode format lets you encode other types of files into text files, so you can post binaries on the text-only Usenet. These binaries form the heart of several newsgroups, including `absm.*`'s various denizens.

| alt.coffee | | | | |
|--------------------------------------|---|---------------|--|------------------|
| # | S | Authors | Subjects | Date & Time |
| 3 | | Kelso Lun... | My Utopia Review | 11/7/00 1:42 PM |
| 3 | | David Dav... | Can Anyone Recommend a Retailer in the UK | 11/7/00 8:59 AM |
| 4 | | CoffeeKid | CoffeeKid (that's me) on the Dan and Scott ... | 11/7/00 7:14 AM |
| | | scharf@h... | Three new bicycle compatible coffee bottle... | 11/7/00 4:41 AM |
| | | T-Rex | Mother Zeolla's biscotti- -THE BEST | 11/7/00 12:50 AM |
| 24 | | T-Rex | Trying to find a decent stovetop standalone... | 11/7/00 12:28 AM |
| 3 | | T-Rex | Re: Standalone milk steamer HELP | 11/7/00 12:22 AM |
| 11 | | Owen Egan | Faema Erika | 11/6/00 8:09 PM |
| 3 | | SusanB | Great espresso from Melitta | 11/6/00 5:38 PM |
| | | David Bur... | Pavoni "Fresco" any good? | 11/6/00 1:36 PM |
| 6 | | flaco | Newbie Equipment Q | 11/6/00 11:38 AM |
| 10 | | John Miller | Tampers: the Italian connection (surreal) | 11/6/00 11:12 AM |
| 3 | | mo_b@... | Silvia Questions | 11/6/00 9:27 AM |
| 10 | | Chris Hays | Opinions on Starbuck's Aroma Thermal Bre... | 11/6/00 9:14 AM |
| | | W'ING | Re: Bono wants his coffee | 11/6/00 8:04 AM |
| | | Noway! | Tiger flecks picture? Who? | 11/6/00 4:58 AM |
| 7 | | Peter Ball... | Is it real? | 11/6/00 1:50 AM |
| 2 | | groovin4... | good espresso in Hamilton Ontario? | 11/6/00 12:44 AM |
| 16 | | Simpson | Nicro vac pot, was Dead NYC Coffee Roaste... | 11/5/00 9:50 PM |
| 1497 articles, 1469 unread, 0 killed | | | | |

More self-dubbed experts per square inch than you'll find in the Pentagon.

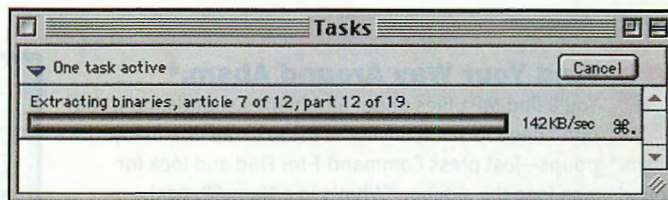
1 Got Usenet?

Most of the larger ISPs, including CompuServe, America Online, and EarthLink, include Usenet access with standard Internet accounts. Check that letter or email you got when you first signed up (the one with your user name and password), or go to your ISP's Web page. The newsgroup server's address should follow a form similar to "news.earthlink.net."

Unfortunately, many smaller ISPs don't offer Usenet access. Even those that do may not have the newsgroups you want. In that case, you should consider a commercial news server.

If your ISP doesn't carry any Usenet newsgroups, or if it's missing the absm.* groups, consider a commercial news server. For a monthly fee starting at around \$15, a commercial service gives you a user name and password to access its servers and download a fixed amount of data (typically 2GB to 5GB). The yearly fee, paid in advance, can amount to as little as \$9 per month.

You might consider a commercial server even if your ISP carries the absm.* newsgroups. Because Usenet is the be-all and end-all of a



A top-notch commercial server can easily saturate a fast DSL line.

commercial server's business, it typically devotes greater resources to its news server than an ISP does. This means you'll encounter very few incomplete files; also, the files remain available much longer (typically five days to a week) and download much faster (great for cable and DSL users).

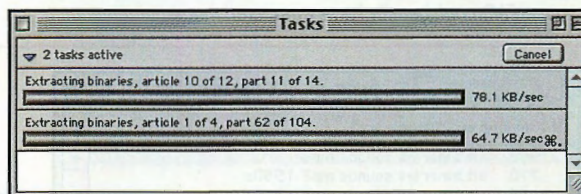
Jeremy Nixon maintains a thorough list of commercial Usenet providers, with notes and prices, at www.exit109.com/~jeremy/news/providers/providers.html.

2 Set Up Your News Reader

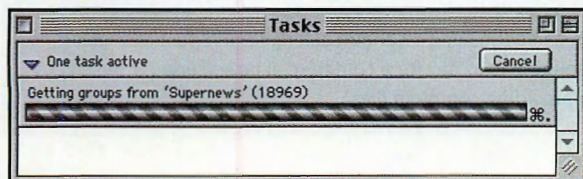
While Microsoft Internet Explorer and Netscape Communicator can display and post Usenet articles, these browsers offer pretty rudimentary features, so you're better off with a free dedicated newsreader.

Mac Orchard (www.macorchard.com), a Web site dedicated to Internet software, offers a good list of current Mac newsreaders. Our favorite is MT Newswatcher (based on the original Newswatcher by John Norstadt), but they all work similarly. MT Newswatcher, a multithreaded newsreader, allows more than one download at a time—a feature we really appreciate.

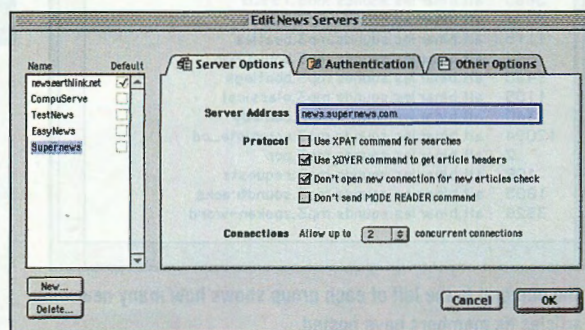
To get started, open News Servers under the Special menu and fill in the name of your news server. Next, under the Authentication tab, insert your user name and password (probably the same ones you use for email). Next, create a special folder to hold your new MP3 files, then open Preferences and tell MT Newswatcher you want to download files to that folder. Once all your info is in place, your newsreader will download a list of all the newsgroups the server carries—this will take a few minutes, since most servers carry 30,000 to 40,000.



MT Newswatcher lets you download several files simultaneously.



Give your newsreader time to download the thousands of group names; it'll take a while.



Don't fiddle with the many settings until you know what you're doing—the defaults will work just fine.

What's in a Name?

Usenet newsgroups are arranged in a hierarchical tree, with the names becoming more specific as you move up the branches. Absm.* (alt.binaries.sounds.mp3) is the specific branch that interests us: *Alt* stands for *alternative* (some smaller news servers skip the alt groups entirely; others don't provide them all), *binary*

tells you that the group primarily shares binary files rather than messages, *sounds* indicates the type of binary, and *mp3* describes the type of sound file. The tree goes even deeper to indicate particular types of MP3 files. Here's a list of some of the more popular absm.* groups:

alt.binaries.sounds.mp3
alt.binaries.sounds.mp3.1950s
alt.binaries.sounds.mp3.1960s
alt.binaries.sounds.mp3.1970s
alt.binaries.sounds.mp3.1980s
alt.binaries.sounds.mp3.1990s
alt.binaries.sounds.mp3.2000s

alt.binaries.sounds.mp3.beatles
alt.binaries.sounds.mp3.blues
alt.binaries.sounds.mp3.bootlegs
alt.binaries.sounds.mp3.classical
alt.binaries.sounds.mp3.comedy
alt.binaries.sounds.mp3.complete_cd
alt.binaries.sounds.mp3.dance

alt.binaries.sounds.mp3.heavy-metal
alt.binaries.sounds.mp3.jazz
alt.binaries.sounds.mp3.latin
alt.binaries.sounds.mp3.pop
alt.binaries.sounds.mp3.soundtracks
alt.binaries.sounds.mp3.spoken-word
alt.binaries.sounds.mp3.themes

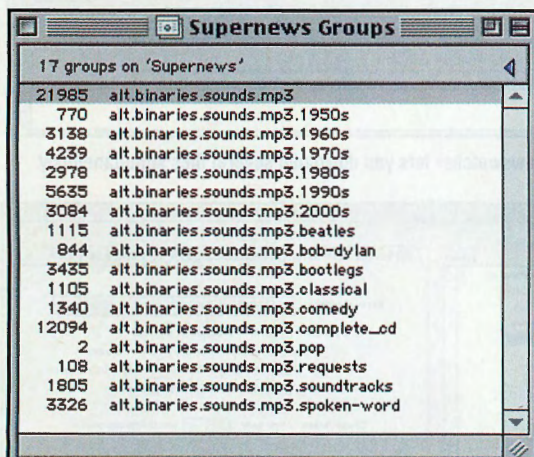
3 Find Your Way Around Absm.*

You'll find MP3 files under alt.binaries.sounds.mp3. You don't need to scroll down the list to locate the many absm.* groups—just press Command-F for Find and look for sounds.mp3 (see the sidebar “What’s in a Name?”, p75).

Save a set of favorites, including at least the decade groups from the 1950s to the present. Create a new Group window, drag the names of your favorite groups into it, and save the file.

Every time you want to check for new MP3s, launch this file. The number next to each absm.* group shows how many new articles the newsgroup's members have posted. Double-click a group to view the new files.

TIP Like many newsgroups, absm.* maintains an FAQ document to answer common questions. Download a copy at www.top.net/taenus/absm3faq.txt and read it. Most Usenet denizens have little patience with posting questions that a trip to the FAQ could easily have answered.



The numeral to the left of each group shows how many new articles its members have posted.

4 Download a Tune or Album

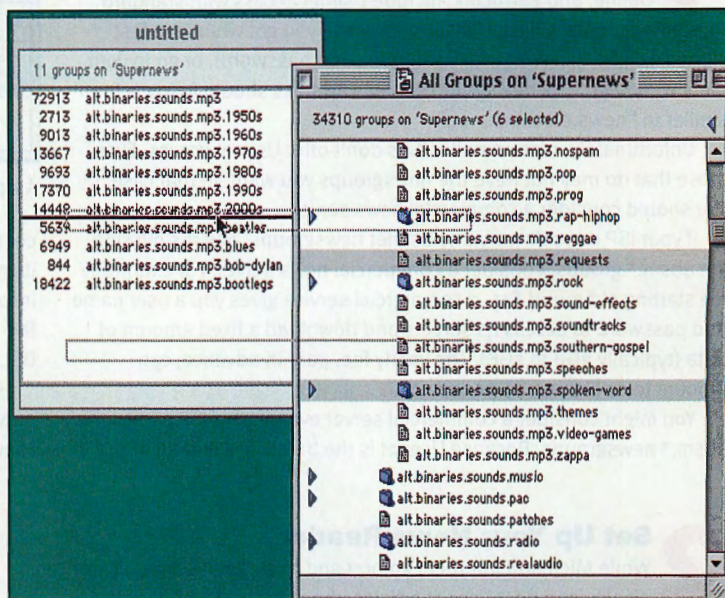
Once you've located a tune you can't live without, don't open that article—simply select the article or group of articles and choose Extract Binaries from the News menu (or press Command-B)—the tune will start making its way onto your hard drive.

Before you download, though, check the column marked S for segments. Every left-angle bracket (<) you see means the file is missing one or more segments and can't be downloaded (see “The Bad News About Segments,” above).

If you want a specific tune or album, post your request in alt.binaries.sounds.mp3.requests. Use a subject line such as “REQ: Artist - Tune. Thanks!”. Don't put any text in the body of the message, since the subject line says it all.

Once your tune downloads, you'll need to decode the uuencode format. Set your newsreader's preferences to Aladdin's free Stuffit Expander, which handles the task automatically.

You can play the downloaded MP3 file with your choice of MP3 player, or burn it onto an audio CD with your CD burner.



Create a Group window of favorites for easy browsing.

The Bad News About Segments

MP3s split binary files into segments to meet strict limits on article size. A newsreader downloads these segments into one file, but if the segments in an MP3 are too large for your news server, you'll end up with an incomplete file, and your newsreader won't download it. (The same thing will happen if some of the segments haven't been posted yet, but you can fix that by just waiting for the posts to finish).

One solution is to email the song's sender, asking for a repost in smaller segments. Another solution is to pay for a commercial news server—these guys pride themselves on providing complete files.



After posting a request, check back often. Respondents will probably reply to your original message, so keep a lookout for your subject line to resurface!

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With VST's industry leading line of ultra-portable FireWire peripherals, you've got the reliability, speed and connectivity to do what you want, where you want.

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Full Height FireWire Hard Drive and Zip Drive



CD-R/W Drive



FireWire 100 & 250MB Zip Drives

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Light Up Your FireWire

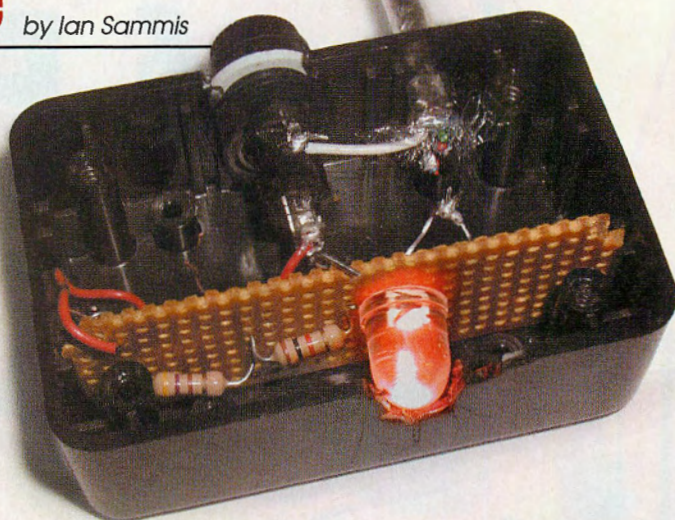
by Ian Sammis

WHAT WE USED

- An open FireWire port
- A FireWire cable
- A bright LED (1.9-volt forward voltage, 20-milliamp forward current)
- A good assortment of resistors
- Soldering tools, wire cutters, and a cheap multimeter
- Connection wire
- 0.063-amp fuse, fuse holder
- Project enclosure, circuit board, and an Xacto knife
- A total lack of anything resembling sanity

If you're a certain type of person, the power of FireWire probably fascinates you. Not its 400-Mbps transfer rate, not the promise of SCSI-like speeds without ID conflicts and termination issues—we're talking *power*, 15 freakin' watts of power supplied on a 30-volt unregulated supply across the two pins of the FireWire cable furthest from the inward-sloping key. Think what you could do with that much power—that's enough to drive a low-power motor, for cryin' out loud!

To get at FireWire's power, we decided to use the FireWire chain to power a single bright LED. Our feeble excuse for doing so was that it's extremely dark under our desks, and with a FireWire-powered flashlight we could see just by shining it where we wanted. Heck, we could even plug it into one of the new iBooks to get a nice portable



PHOTOGRAPHY BY W.B. JONES

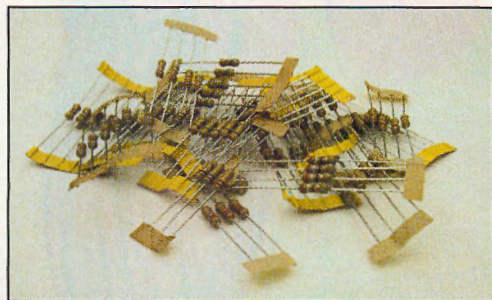
light! (OK, we did it because it sounded like fun and we're crazy).

Before we describe what we did, bear one thing in mind—this is completely insane. *MacAddict* magazine takes no responsibility for any damage you do to yourself, your computer, or others around you by trying to reproduce our steps. Screw up, cause a short, and you risk damaging your FireWire ports, at the very least. If you're *really* unlucky with your soldering tools, you might even have a shot at creating the first FireWire fire. Now that we've warned you off, here's how we built our flashlight.

1 Part Gathering

We went to our friendly neighborhood electronics store (if your neighborhood doesn't have one, an unfriendly or clueless electronics store will usually suffice), and bought an LED and a good assortment of resistors (it's rarely worth working out precisely which resistors you need ahead of time—resistors are cheap enough so that it's easier to just keep a good supply on hand). For the sake of elegance, we also picked up a perforated circuit board and a project enclosure.

It's not worth working out what resistors you need ahead of time—this giant assortment cost us about \$3.



LEDs and Power

Figuring out how to connect the LED was the trickiest part of this procedure. Putting the entire 30w supplied by the FireWire chain across the LED would have burned it out; we needed to hook up the LED through a resistor to keep the current and power level low enough to avoid burning out the LED or the FireWire port itself.

How did we figure out what resistor to use? We looked at the back of our LED's package, which listed specifications for how the LED performs. We looked for two in particular: the forward voltage and the forward current.

The forward voltage is the voltage drop across the LED when you've got it connected in the correct direction. The forward current is the current that must flow through the LED to make it light up. In our case, the forward voltage is 1.9V and the forward current is 20 milliamps. To use the LED, then, we needed to add

| Opto-Electrical Characteristics | |
|---------------------------------|----------|
| Forward Voltage (typ) | 1.9V |
| Forward Current | 20mA |
| Luminous intensity (typ) | 12000mcd |
| Peak emission wavelength | 620nm |

Note: Longer Lead is anode (+)

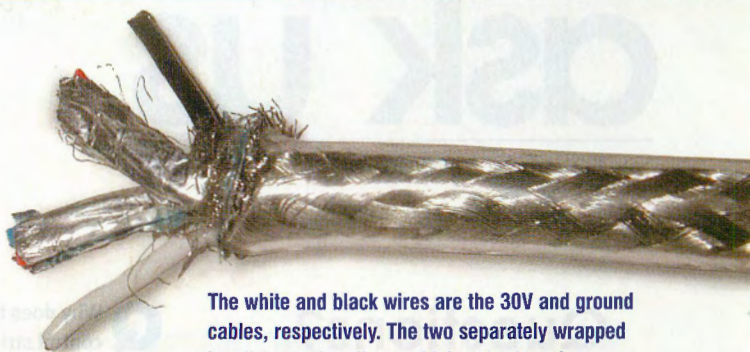
Here's the pertinent info from the LED's packaging—the forward voltage and the forward current. It also tells us which end is the anode.

resistors to dissipate the remaining 28.1V with the same current (remember, the current has to be the same everywhere in a simple loop circuit like this!). Ohm's law, which you might remember from high school physics, states that the voltage drop across a resistor equals the current through the resistor times the resistance. In this case, $28.1V = 0.02A * R$ (where R is the resistance). Using our fading algebraic skills, we calculated the following: $R \approx 1.4$ kilo-ohms (k Ω).

So we put a 1k Ω and a 470 Ω resistor in front of the LED to get it to light up properly without drawing a dangerous current.

2 Wire Cutting

We took our FireWire cable and cut it with a sharp pair of wire cutters. Inside, we found six individual wires. We quickly reasoned that the two separately shielded bundles, consisting of two wires each, must be the data lines, leaving the thicker black and white wires for power. Stripping back about two inches of cable and using our multimeter, we quickly confirmed that the white wire was the 30V supply, while the black one was the ground.

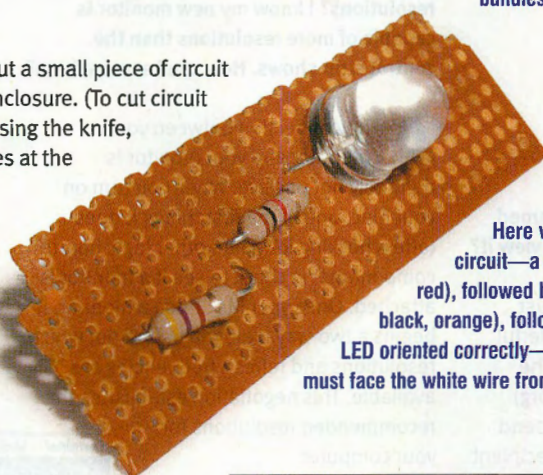


The white and black wires are the 30V and ground cables, respectively. The two separately wrapped bundles are data lines, which we're ignoring.

3 Circuit Building

First we used our Xacto knife to cut out a small piece of circuit board that would fit nicely into our enclosure. (To cut circuit board, you just score it along a row of holes using the knife, then break it.) We had to cut two small notches at the edges to fit the enclosure's lid.

Using as little of the circuit board as we could manage (so we could position the LED near the center of the box), we connected the two resistors and the LED. For the moment, we just twisted the wires together to connect them.

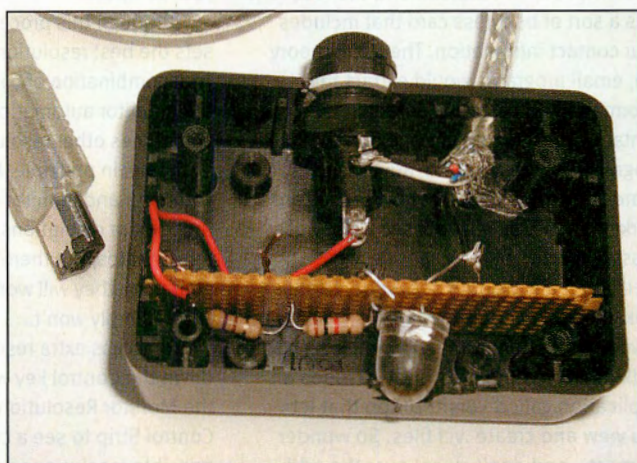


Here we've assembled the meat of the circuit—a 470-ohm resistor (yellow, purple, red), followed by a 1-kilo-ohm resistor (brown, black, orange), followed by the LED itself. Get the LED oriented correctly—its positive connector (anode) must face the white wire from the FireWire cable.

4 Project Boxing

We thought for a moment about our soldering skills, then returned to the electronics store and bought a 63mA fuse to protect our Mac, just in case we'd somehow slipped a decimal place in figuring out what resistors we needed (see "Safety First," below). We then installed the whole thing in our project enclosure. We cut three holes in the enclosure: a 1/2-inch hole for the FireWire cable, a hole for our fuse holder, and a hole that let our LED's light emerge from the enclosure. We inserted the FireWire cable into the box and soldered the power end to one of the fuse holder's contacts, the negative end to the negative terminal of the LED. We used a short piece of connection wire to hook up the other terminal of the fuse holder to the other terminal of the 470-ohm resistor.

After steadying our nerves and working out what we'd tell Apple ("The FireWire port just stopped working—it was so strange!"), we plugged in the FireWire cable and held our breath. Fortunately for us, the LED lit up nicely.



And there it is—the completed device

Ian Sammis didn't need to worry—no fuses were harmed in the making of this how-to.

Safety First

If we'd inadvertently created a short across the resistors, our circuit would have drawn too much power, potentially damaging the Mac's FireWire port. Since a quick glance at the burns on our fingers didn't reassure us about our soldering skills, we decided not to trust skill alone to keep our Mac safe. Instead, we built a fuse into our circuit.

A fuse is usually just a very thin piece of metal that melts when the current passing through it becomes too large—this protects more-important parts of the circuit. As designed, the circuit we built should never exceed about 20 milliamps of current (1A equals 1,000mA). By soldering a 63mA fuse into the circuit, we guaranteed that the fuse would blow before we damaged our valuable Macs.



Put in a fuse to protect your Mac—trust me.

ask us

So that's what those stupid .vcf files are!

Questions?

Submit technical questions or helpful tips directly via email (askus@macaddict.com) or c/o **MacAddict**, 150 North Hill Dr., Brisbane, CA 94005.



Find Super Res and OTTool on The Disc.

Q I occasionally receive a file attachment with my emails, named **vCard.vcf**. What is this and how can I view it?

A Some ideas work, and others just don't—and the vCard is a wonderful idea that has never really taken off. The Internet Mail Consortium (www.imc.org) created the vCard format. When you send email with a vCard attachment, the recipient gets a sort of business card that includes your contact information. Then, the theory ran, email programs would extract this information and create a database of contacts. Unfortunately, none of the email programs for the Mac take advantage of vCards—and if you look at how these cards work on the PC side, you'll see we're not missing much.

If you really want to see what .vcf files look like, download the Mac vCard software developer kit from ICM (www.imc.org/pdi/sdk-MacOS.sit.hqx). This kit includes an application called VersitPDIApp that lets you view and create .vcf files. So wonder no more—and don't sweat over the odd email attachments you may receive from time to time.

STREETEER.VCF

IBM Corporation

Networking Software Division
Dept. C60, Bldg. 002
Research Triangle Park, NC
27009



Tom Streeter
Marketing, Versit Project
+1 (919) 543-0222

See what you're missing...*not!* In reality, vCard.vcf files are really nothing special—and most aren't nearly this complete.

Q Why does the Monitor Resolution control strip only show certain resolutions? I know my new monitor is capable of more resolutions than the control strip shows. How can I access them?

A The connection between your computer and your monitor is definitely not passive. When you turn on your Mac, one of the first things it does (after checking RAM and other logic board components) is check to see if a monitor is attached. Once your Mac finds a monitor, it begins a two-way dialogue to find out which resolutions and refresh frequencies are available. This negotiation establishes the recommended resolutions for your computer.

Although this process usually sets the best resolutions for your combination of computer and monitor automatically, sometimes other resolutions are available. In principle, both your computer and monitor can use these extra resolutions and refresh rates, but there's no guarantee they will work—in fact, some simply won't.

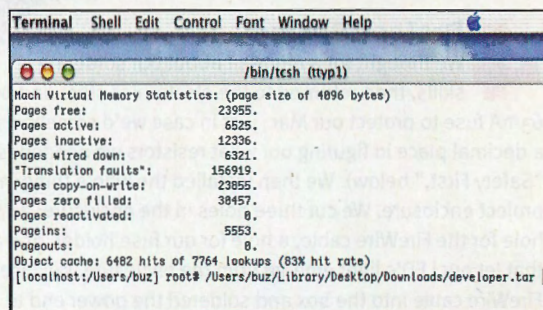
To access extra resolutions, hold down the Control key while you click the Monitor Resolution Module in the Control Strip to see a complete list of the possible resolutions and refresh rates. Unfortunately, this little trick won't work with iMacs, since the monitor and computer are preconfigured to allow just three standard resolutions: 640 by 480, 800 by 600, and 1,024 by 768.

Some nice utilities can perform the same function. A free resolution switching utility called Super Res is available from Griffin Technology (www.griffintechology.com).

Q The OS X Public Beta is great! It really is a breath of fresh air, and I can't wait for it to go final.

I do have one concern, however: I like to use the Terminal to work with files and programs, but it takes lots of typing to enter the full path for some files and directories. Is there an easier way to enter complete paths in the OS X Public Beta's Terminal application?

A In typical Apple fashion, the Terminal application included with Mac OS X Public Beta is more than your standard CLI—Apple tried to integrate it with the Finder as closely as possible. The usual Cut, Copy, and Paste commands work decently, but there's a much better trick. You can just drag an item (a folder, document, or app) from the Finder into the Terminal window. For example, drag a folder into the window, and the Terminal will show the full path to that folder at the current command line. This is very handy for running `gnutar` or `tar` to unarchive a downloaded file—just type `gnutar -xf`, drag the file into the Terminal window, and press Return.



How on earth would you ever figure out this developer file's path? A Terminal trick comes to the rescue.

Q I have an Apple LaserWriter Pro 630 and it has a problem: Paper jams inside the printer before the page comes out. Sometimes the printer even crumples up the paper, accordion-style. This is usually a great printer, but I don't want to spend a fortune getting it repaired. How can I fix it?

A You really have to give credit to Apple for the LaserWriter series—it's amazing that so many of them are still alive and pumping out the pages. You can network any of these laser printers (including your Pro 630)—and with the rise of home Ethernet networks, keeping them going is well worth the trouble. Luckily, these days we understand why things go wrong with laser printers. This means you can fix most old laser printers relatively inexpensively—you just have to know where to look.

One great printer resource you'll find on the Internet is the somewhat verbosely

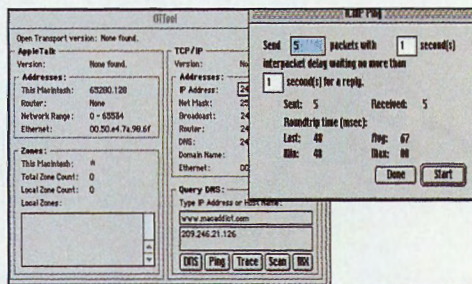
named Fixyourprinter.com (<http://fixyourprinter.com>). This site sells repair kits to fix many common problems, including the 630 paper jam you describe (that particular kit costs about \$40). Don't be afraid to try fixing some of those old peripherals yourself—it's easier than you might expect.

Q My PC-using friends always mention ping when they are talking about network games. They often ask me if I know how to ping servers on my Mac, and say their PCs have ping built in. Please, how can I ping with my Mac?

A These PC users probably wouldn't be bragging so loudly if you reminded them that they are using an ancient DOS program with their fancy new Clone-o-Rama PCs. Despite its origins, the quick-and-dirty ping utility on PCs can come in handy. Ping is a special network operation that allows you to issue a kind of "Are you there?" command to other IP devices. In other words, when you send a ping packet to an IP address, the computer at that address should respond, signaling that the connection is alive and well. Pinging is also useful for testing the speed of connectivity between two IP

devices—a fast ping indicates a fast connection, a slow ping shows the opposite. When you're looking at ping rates in your favorite network games, remember that low numbers are better—they mean the ping packet took a fairly short time to return.

Many Mac utilities can ping; a quick search on Versiontracker.com should give you plenty of choices. One of our personal favorites is the free OTTool from Neon Software (www.neon.com). So ping away!



Looks like the MacAddict Web address is alive and well—if it were down, we wouldn't be able to ping it.

Q There are so many cool peripherals around today, and I would love to get some for my Mac. The problem is that they are all USB, and my aging Power Macintosh 6100 has only serial ports. Is there an adapter or internal card that will let me use USB on my 6100?

A Just a few short years ago when Apple introduced the iMac, USB stuff was rare and in short supply. One of the first USB necessities was an adapter to use ADB and serial port peripherals on the iMac. Nowadays, it's getting hard to even find a printer for older Macs. You can, however, add USB to many older Macs, letting them take advantage of the vast numbers of USB peripherals available. To add USB to a computer, you need an available PCI slot on your computer. Unfortunately, the 6100, 7100, and 8100 series used an older type of expansion slot called NuBus—and there aren't any NuBus USB expansion cards.

If your computer *does* have a PCI slot, however, and you would like to add a USB PCI card, you have lots of options. You don't even need a Mac-specific card—any PC USB PCI card should work just fine. All you have to do is download and install the free USB Adapter Card Support software from Apple (search for it at <http://asu.info.apple.com>).

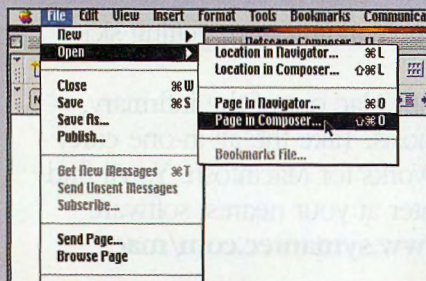
Buz Zoller is a technology support specialist for a school district in Texas.

Email in HTML

Q How do you create the HTML email messages so popular today, such as the mail I receive from MP3.com?

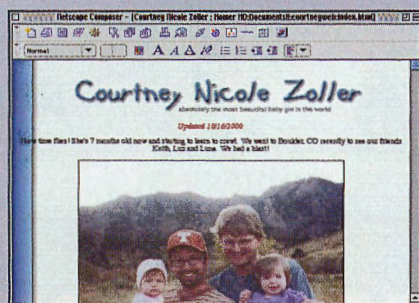
A These days, more and more email messages are generated in full HTML format, making them look like Web pages. While most current email programs, such as Eudora and Outlook Express, let you format your messages as HTML, that really just means you can change font colors, background colors, and justification. You can't create tables, insert graphics, or do any fancy formatting. At the moment, the best program for creating HTML email is Netscape Communicator, which uses a combination of Netscape's Composer HTML editor and the Netscape Mail component. Complex HTML documents usually take longer to download and view than plain text. You might want to start small and elicit some feedback by sending HTML email to just a few recipients.

1 Create your email message in any HTML editor, then open it in Netscape Composer (Communicator's HTML creation module).



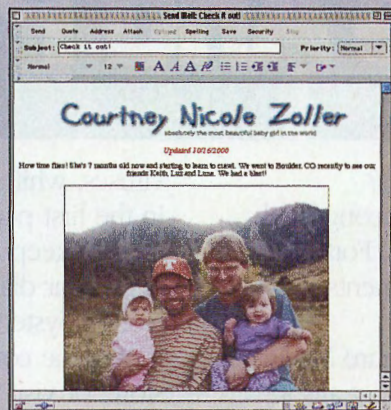
First, open your HTML file in Composer.

2 After you open the HTML document in Composer, choose Select All from the Edit menu, then choose Copy from the Edit menu.



There it is! Next, you simply copy and paste your HTML document into the Mail module.

3 With the whole document copied, open the Mail section of Netscape, then paste the page into a new message and send it. If you'd rather use a different program, mail the page to yourself, then forward it from your other email program.



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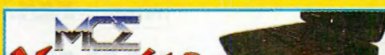
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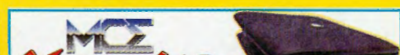
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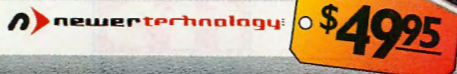
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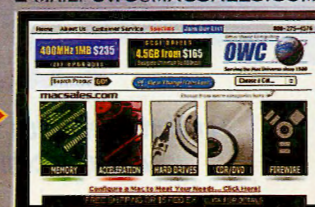
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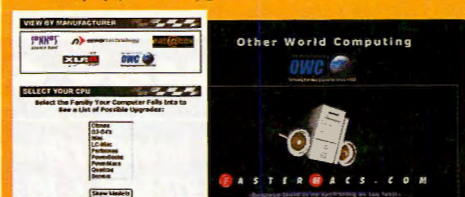
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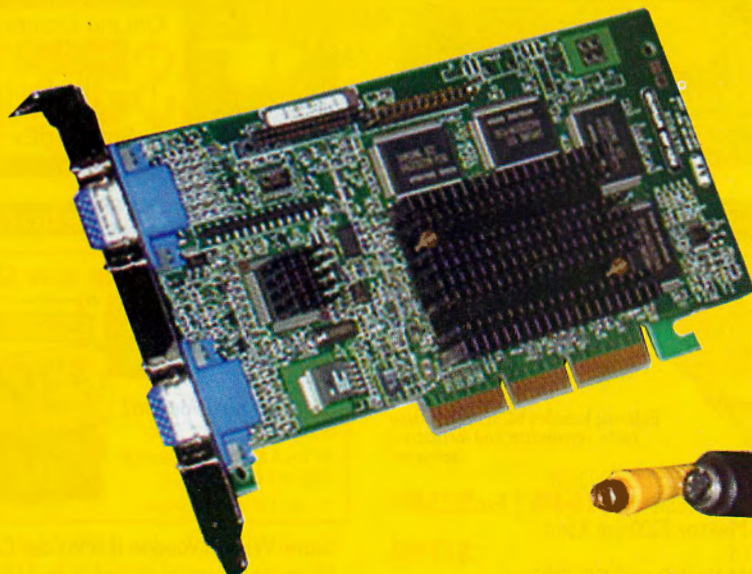


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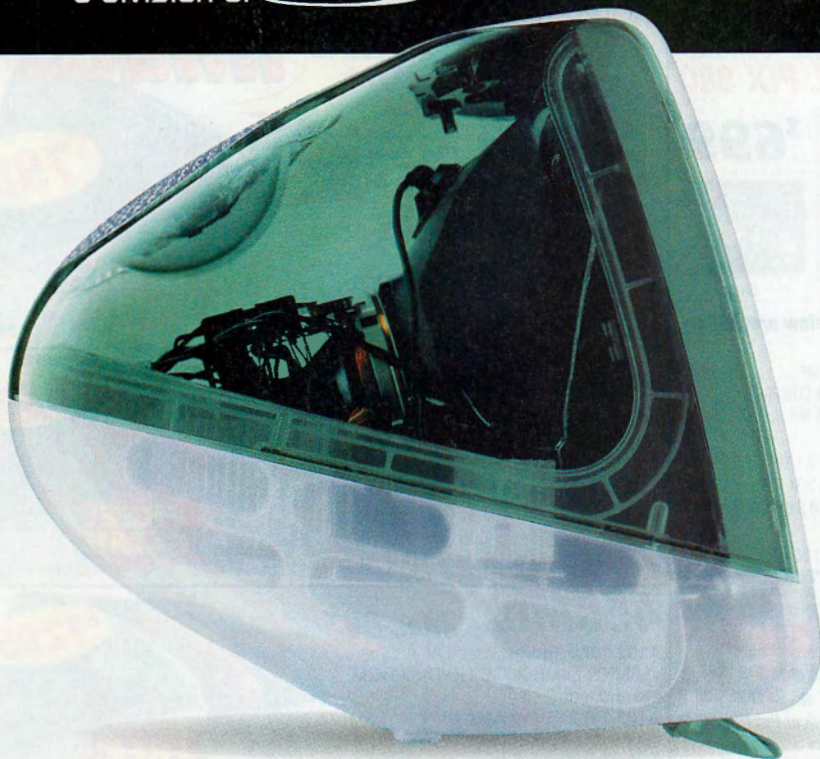
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| Model | iMac | iMac DV | iMac DV+ | iMac SE |
|---------------|--------|---------|----------|---------|
| Processor | 350MHz | 400MHz | 450MHz | 500MHz |
| Hard Drive | 7GB | 10GB | 20GB | 30GB |
| RAM | 64MB | 64MB | 64MB | 128MB |
| Optical Drive | CD | CD | DVD | DVD |
| FireWire | No | 2 Ports | 2 Ports | 2 Ports |
| AirPort Ready | No | Yes | Yes | Yes |
| iMovie 2 | No | Yes | Yes | Yes |



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| RAM | 64MB | 64MB |
| On-chip cache | 256K | 256K |
| Optical Drive | CD | DVD |
| FireWire/USB | 1 Port ea. | 1 Port ea. |
| AirPort Ready | Yes | Yes |
| Ethernet | 10/100BT | 10/100BT |
| Modem | 56K | 56K |

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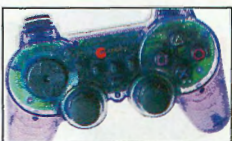
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|----------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Processor | 450MHz | 400MHz | 450MHz | 500MHz | 500MHz |
| Hard Drive | 20GB | 20GB | 30GB | 40GB | 40GB |
| RAM | 64MB | 64MB | 128MB | 256MB | 256MB |
| Optical Drive | DVD | DVD | DVD | DVD | DVD-RAM |
| FireWire | 2 Ports | 2 Ports | 2 Ports | 2 Ports | 2 Ports |
| GB Ethernet | 10/100 | Yes | Yes | Yes | Yes |
| Backside Cache | 1MB at 225MHZ | 1MB at 200MHZ | 1MB at 225MHZ | 1MB at 250MHZ | 1MB at 250MHZ |
| Was | \$1794 ⁹⁸ | \$1594 ⁹⁸ | \$2494 ⁹⁸ | \$3194 ⁹⁸ | \$3494 ⁹⁸ |
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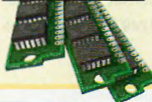
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| Model | PowerBook | PowerBook | PowerBook |
|-----------------------|----------------------|----------------------|----------------------|
| Processor | 400MHz | 500MHz | 500MHz |
| Hard Drive | 10GB | 12GB | 20GB |
| RAM | 64MB | 128MB | 128MB |
| Optical Drive | DVD | DVD | DVD |
| FireWire/USB | 2 Ports/ea | 2 Ports/ea | 2 Ports/ea |
| Modem | 56K | 56K | 56K |
| Backside Cache | 1MB L2 | 1MB L2 | 1MB L2 |
| Was | \$2494 ⁹⁸ | \$3294 ⁹⁸ | \$3494 ⁹⁸ |
| Price Drop | - | -\$500 | -\$500 |
| Low Zone Price | \$2494 ⁹⁸ | \$2794 ⁹⁸ | \$2994 ⁹⁸ |
| Apple Rebate | -\$200 | -\$200 | -\$200 |

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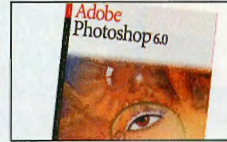
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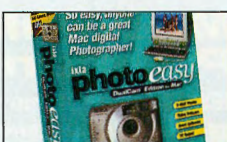
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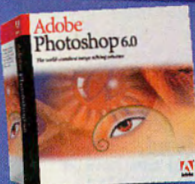
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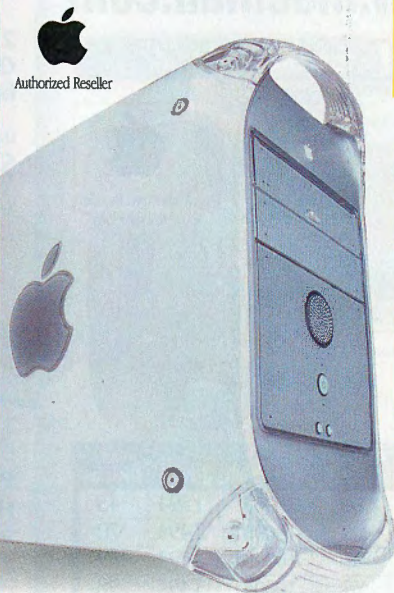


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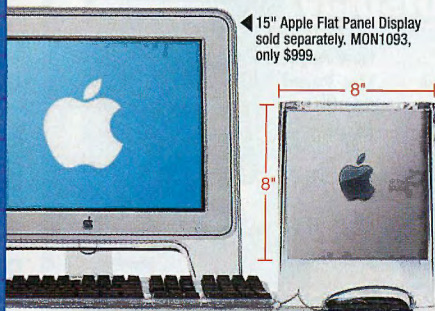
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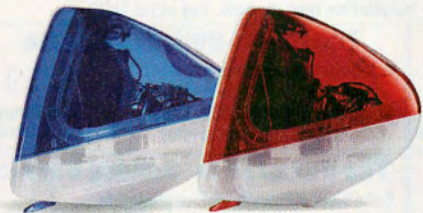
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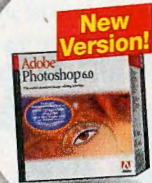
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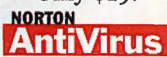
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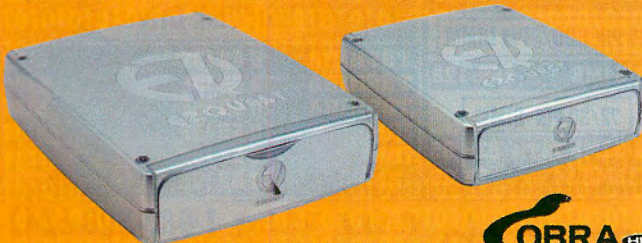
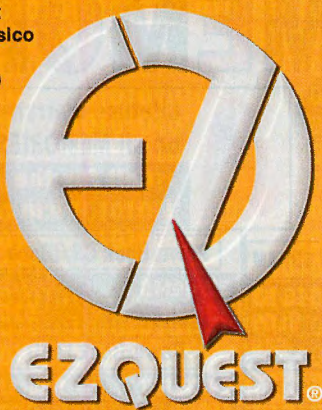
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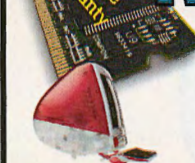
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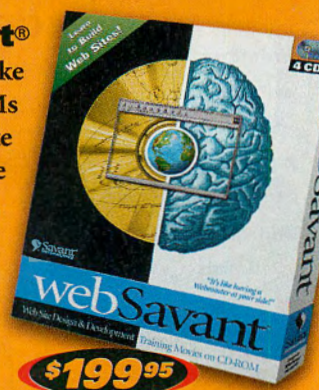
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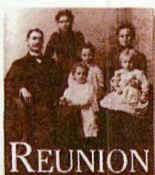
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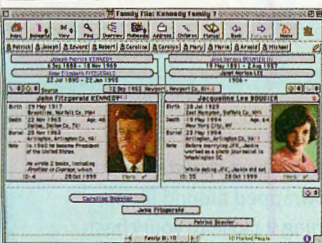
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